

FINAL
2003 AQMP APPENDIX II

CURRENT AIR QUALITY

AUGUST 2003

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

GOVERNING BOARD

Chairman: WILLIAM A. BURKE, Ed.D.
Speaker of the Assembly Appointee

Vice-Chair: S. ROY WILSON, Ed.D.
Supervisor, Fourth District
Riverside County Representative

Members:

FRED AGUIAR
Supervisor, Fourth District
San Bernardino County Representative

MICHAEL D. ANTONOVICH
Supervisor, Fifth District
Los Angeles County Representative

HAL BERNSON
Councilmember, City of Los Angeles
Cities Representative, Los Angeles County/Western Region

JANE W. CARNEY
Senate Rules Committee Appointee

WILLIAM CRAYCRAFT
Councilmember, City of Mission Viejo
Cities Representative, Orange County

BEATRICE LAPISTO-KIRTLEY
Councilmember, City of Bradbury
Cities Representative, Los Angeles County/Eastern Region

RONALD O. LOVERIDGE
Mayor, City of Riverside
Cities Representative, Riverside County

LEONARD PAULITZ
Mayor Pro-Tem, City of Montclair
Cities Representative, San Bernardino County

CYNTHIA VERDUGO-PERALTA
Governor's Appointee

JAMES W. SILVA
Supervisor, Second District
Orange County Representative

EXECUTIVE OFFICER
Barry R. Wallerstein, D.Env.

CONTRIBUTORS

Barry R. Wallerstein, D.Env.
Executive Officer

Elaine Chang, DrPH
Deputy Executive Officer
Planning, Rule Development and Area Sources

Laki Tisopulos, Ph.D., P.E.
Assistant Deputy Executive Officer
Planning, Rule Development and Area Sources

Zorik Pirveysian
Planning and Rules Manager
Planning, Rule Development and Area Sources

Authors:

Planning & Rules

Joe Cassmassi
Shoreh Cohanim

With the Assistance of:

Information Technology

Curt Miller
Tom Parsons
Sandra Hom

Production:

Planning & Rules

Patti Whiting
Faye Thomas

U. S. Environmental Protection Agency:

Region IX

Coe Owen

Table of Contents

SUMMARY

Summary II-S-1
 South Coast Air Basin..... II-S-1
 Riverside County Salton Sea Air Basin..... II-S-2
 Seasonal, Day-of-Week and Diurnal Variations II-S-2

CHAPTER 1 INTRODUCTION

Introduction..... II-1-1
 Air Quality Overview II-1-1
 Air Quality Standards and Episode Levels II-1-2
 South Coast Air Quality Management District..... II-1-3
 South Coast, Salton Sea and Mojave Desert Air Basins II-1-4
 Weather II-1-4
 Emissions..... II-1-5
 Air Quality Trends II-1-6
 Air Quality in the District Compared to Other Areas of the U.S. II-1-6

CHAPTER 2 AIR QUALITY IN THE SOUTH COAST AIR BASIN

Air Quality in the South Coast Air Basin II-2-1
 Ozone (O₃) II-2-1
 Carbon Monoxide (CO)..... II-2-9
 Suspended Particulate Matter (PM₁₀) II-2-14
 Suspended Particulate Matter (PM_{2.5})..... II-2-19
 Nitrogen Dioxide (NO₂)..... II-2-22
 Sulfur Dioxide (SO₂) II-2-24
 Sulfate (SO₄⁻)..... II-2-25
 Lead (Pb)..... II-2-26

CHAPTER 3 AIR QUALITY IN THE RIVERSIDE COUNTY SSAB

Air Quality in the Riverside County SSAB II-3-1
 Ozone (O₃) II-3-2
 Suspended Particulate Matter (PM₁₀) II-3-2
 Suspended Particulate Matter (PM_{2.5})..... II-3-3
 Carbon Monoxide (CO)..... II-3-4
 Nitrogen Dioxide (NO₂)..... II-3-4
 Sulfur Dioxide (SO₂) II-3-4

Sulfate (SO ₄ ⁼).....	II-3-4
Lead (Pb).....	II-3-5

ATTACHMENT

LIST OF FIGURES:

Figure 1-1: 2001 Maximum Pollutant Concentrations As Percent of Standards	II-1-1
Figure 1-2: South Coast Air Quality Management District.....	II-1-3
Figure 1-3: 1997 Average Daily Emissions.....	II-1-5
Figure 1-4: Percent Basin-Days Exceeding the Federal Standard, 1976-2001	II-1-6
Figure 1-5: Ozone - 1998-2000, Average Number of Days Exceeding Federal Standard	II-1-7
Figure 2-1: Monthly Number of Days Exceeding Federal Standards in 2001	II-2-2
Figure 2-2: Ozone - 2001, Number of Days Exceeding 1-Hour Federal Standard	II-2-4
Figure 2-3: Ozone - 2001, Number of Days Exceeding 8-Hour Federal Standard	II-2-5
Figure 2-4: 5-Year Average Number of Days Per Month Exceeding Federal Ozone Standard in the Basin.....	II-2-6
Figure 2-5: Ozone, Diurnal Variation, May-October 2001, Maximum Concentration for Each Hour	II-2-7
Figure 2-6: Ozone, Day-of-Week Variation, 1999-2001, Exceedances of the Federal Standard by Day of Week.....	II-2-8
Figure 2-7: Carbon Monoxide - 2001, Maximum 8-Hour Average Concentration, ppm.....	II-2-10
Figure 2-8: Carbon Monoxide, Seasonal Variation, 1999-2001, Average Monthly Exceedances of Federal Standard	II-2-11
Figure 2-9: Carbon Monoxide, Diurnal Variation, 2001, Maximum Concentration for Each Hour	II-2-12

Figure 2-10: Carbon Monoxide, Day-of-Week Variation, 1999-2001,
Average Concentrations by Day of WeekII-2-13

Figure 2-11: Chemical Composition of PM₁₀, 1995II-2-15

Figure 2-12: Suspended Particulate Matter (PM₁₀) - 2001, Annual
Arithmetic Mean, µg/m³.....II-2-17

Figure 2-13: Basin-Days Exceeding State PM₁₀ Standard by
Month, 1999-2001II-2-18

Figure 2-14: Monthly Average PM₁₀ Concentration, 1999-2001.....II-2-18

Figure 2-15: Day-of-Week Variation, 1999-2001, Average PM₁₀
Concentration by Day of WeekII-2-19

Figure 2-16: Suspended Particulate Matter (PM_{2.5}) - 2001, Annual
Arithmetic Mean, µg/m³.....II-2-20

Figure 2-17: PM_{2.5} Seasonal Variation, 1999-2001, Average Number
of Basin-Days Exceeding Federal Standard by MonthII-2-21

Figure 2-18: PM_{2.5} Day-of-Week Variation, 1999-2001, Basin-Days
Exceeding the Federal Standard by Day of WeekII-2-22

Figure 3-1: Maximum Pollutant Concentrations as Percent of
Standards, Riverside County SSABII-3-1

LIST OF TABLES:

Table 1: 2001 Maximum Annual Average Nitrogen Dioxide
ConcentrationsII-2-23

Table 2: 2001 Maximum 24-Hour Average Sulfur Dioxide
ConcentrationsII-2-25

Table 3: 2001 Maximum 24-Hour Average Sulfate Concentrations.....II-2-26

Table 4: 2001 Maximum Quarterly Average Lead ConcentrationsII-2-27

ATTACHMENT LIST:

Table A-1: Ambient Air Quality Standards

Table A-2: Episode Criteria

Table A-3: Air Monitoring Stations and Source/Receptor Areas

Figure A-1: South Coast Air Basin and Adjoining Areas of Salton Sea Air Basin

Table A-4: Ozone - Number of Days Exceeding the Federal Standard

Table A-5: Ozone, 1976 - 2001, Annual Number of Days of First/Second Stage Episodes

Table A-6: Ozone - Annual Maximum 1-Hour, ppm, 1955-2001

Table A-7: Carbon Monoxide - Number of Days Maximum 8-Hour Average Exceeded the Federal Standard

Table A-8: Carbon Monoxide - Number of Days Maximum 8-Hour Average Exceeded the Federal Alert Level

Table A-9: Carbon Monoxide, Annual Maximum 8-Hour Average, ppm, 1976-2001

Table A-10: Suspended Particulates (PM₁₀), Annual Arithmetic Mean, $\mu\text{g}/\text{m}^3$, 1985-2001

Table A-11: Suspended Particulates (PM₁₀), Annual Geometric Mean, $\mu\text{g}/\text{m}^3$, 1985-2001

Table A-12: Suspended Particulates (PM₁₀) - Percent of Sampling Days Exceeding State Standard and Federal Standards, 1985-2001

Table A-13: Suspended Particulates (PM₁₀), Annual Maximum 24-Hour Average, $\mu\text{g}/\text{m}^3$, 1985-2001

Table A-14: Nitrogen Dioxide - Annual Average of All Hours, pphm, 1976-2001

Table A-15: Nitrogen Dioxide - Number of Days 1-Hour Average Exceeded the State Standard, 1976-2001

Table A-16: Nitrogen Dioxide, Annual Maximum 1-Hour, ppm, 1976-2001

Table A-17: Sulfur Dioxide - Annual Average, pphm, 1976-2001

Table A-18: Sulfur Dioxide, Annual Maximum 1-Hour Average, ppm,
1976-2001

Table A-19: Sulfate - Percent of Sampling Days Exceeding the State
Standard, 1976-2001

Table A-20: Sulfate - Maximum 24-Hour Averages, 1976-2001

Table A-21: Lead - Highest Calendar Quarter Mean, $\mu\text{g}/\text{m}^3$, 1976-2001

Table A-22: Lead - Highest Monthly Averages, $\mu\text{g}/\text{m}^3$, 1976-2001

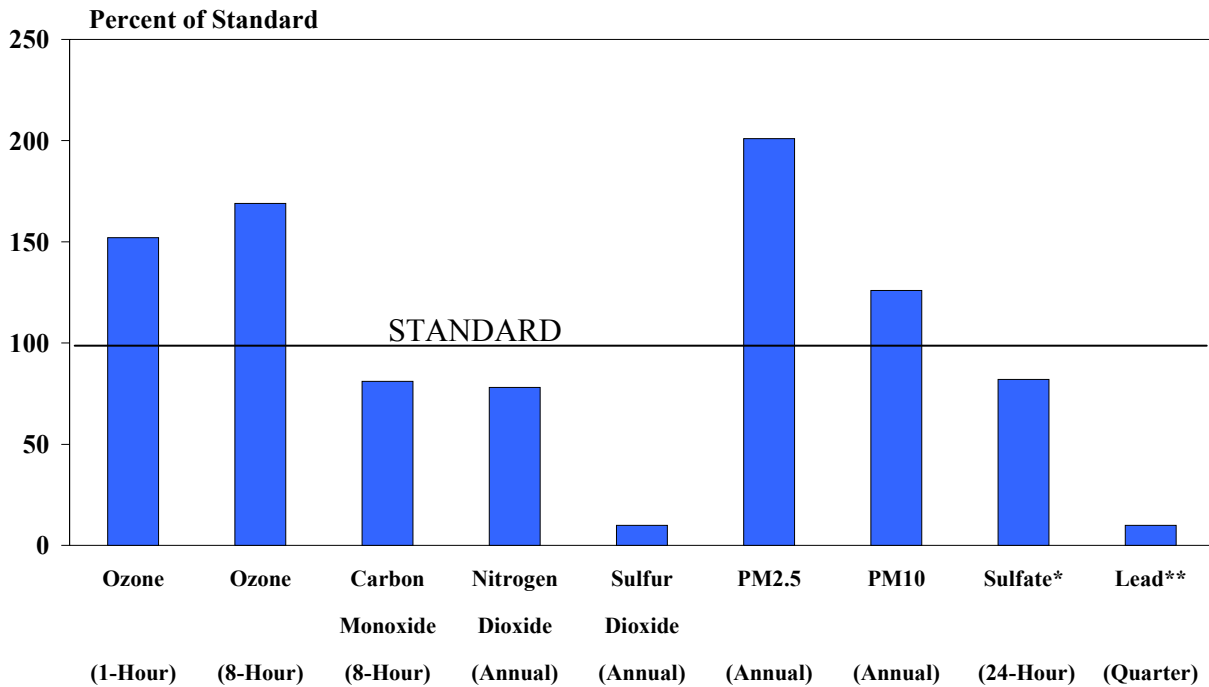
CHAPTER 1

INTRODUCTION

INTRODUCTION

Air Quality Overview

In 2001, the South Coast Air Quality Management District (District) monitored ambient air quality for criteria pollutants (ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matters, lead and sulfate) at 32 locations in Southern California's South Coast Air Basin (Basin) and in the neighboring areas of the Salton Sea Air Basin (SSAB) that are within the District's jurisdiction. Pollutant concentrations exceeded federal and/or state standard(s) for ozone and particulate matters (PM10 and PM2.5). Figure 1-1 shows the maximum pollutant concentrations for 2001 as a percentage of the federal standards.



* There is no federal standard for sulfate.

** Higher measurements were recorded at special monitoring sites immediately adjacent to sources.

FIGURE 1-1
2001 Maximum Pollutant Concentrations as Percent of Standards

Maximum 1-hour average and 8-hour average ozone concentrations in 2001 (0.190 ppm and 0.144 ppm) were 152% and 169% of the federal 1-hour and 8-hour standards, respectively. Maximum 24-hour average and annual average PM10 concentrations ($219 \mu\text{g}/\text{m}^3$ and $63.1 \mu\text{g}/\text{m}^3$) were 146% and 125% of the federal 24-

hour and annual standards, respectively. Maximum 24-hour average and annual average PM_{2.5} concentrations (98.0 µg/m³ and 31.1 µg/m³) were, respectively, 150% and 201% of the federal 24-hour and annual standards. Carbon monoxide concentration did not exceed the standards in 2001. The highest 8-hour average carbon monoxide concentration of the year (7.71 ppm) was 81% of the federal standard.

In 2001, the federal nitrogen dioxide standard was not exceeded, with a maximum concentration (0.0419 ppm) which was 78% of the federal standard. The maximum 1-hour average nitrogen dioxide concentration (0.25 ppm) was 96% of the state standard. The maximum 24-hour sulfate concentration (20.6 µg/m³) was 82% of the state standard. (There is no federal sulfate standard.) Sulfur dioxide and lead concentrations continued to remain well below the federal and state standards in 2001.

Air Quality Standards and Episode Levels

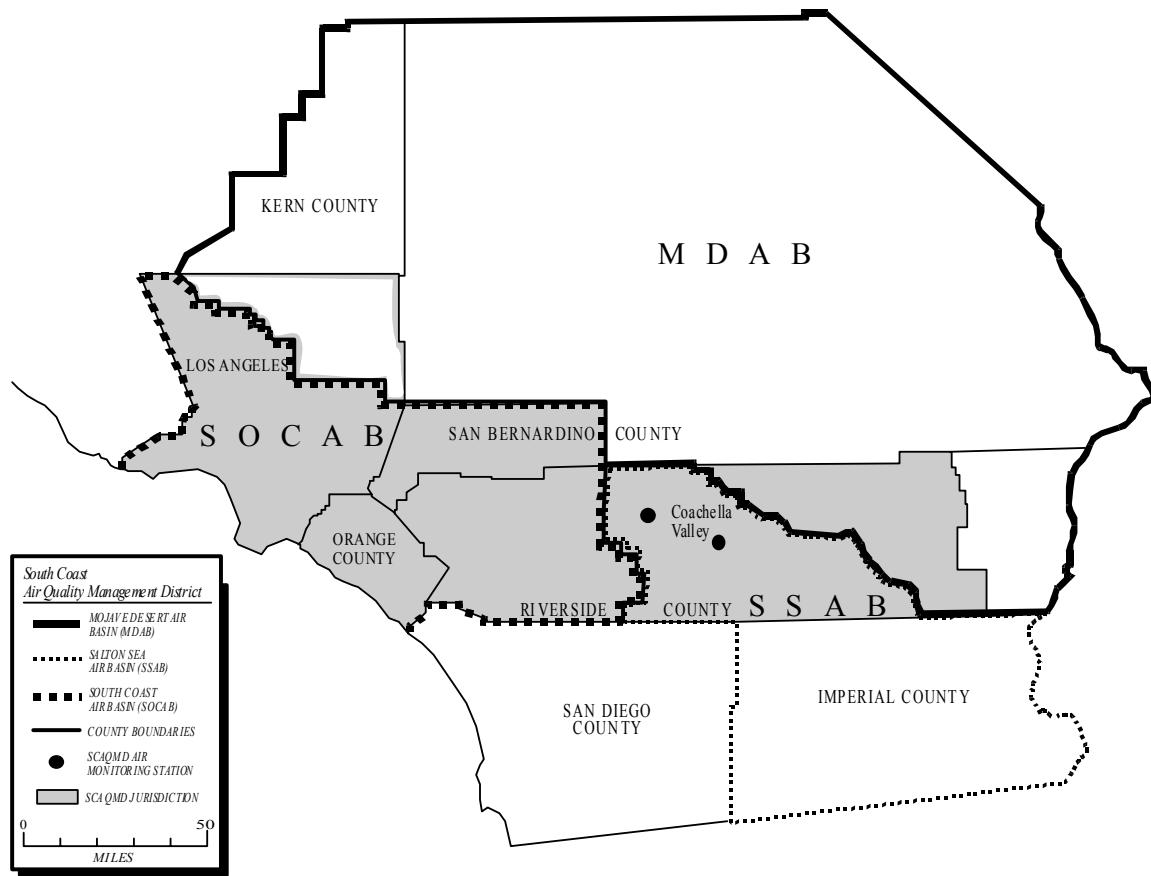
Both the federal and state governments have adopted ambient air quality standards, which define the concentration below which long-term exposure to a pollutant is not expected to cause adverse effects to public health and welfare. Episode levels have also been established, below which short-term exposures are not expected to be injurious to health. The standards and episode levels are summarized in Tables A-1 and A-2 in the Attachment.

Both standards and episode levels are periodically reviewed to incorporate the findings from the most current research available on effects of pollutants. In 1997, the U.S. EPA adopted new federal air quality standards for particulate matter and ozone. The 8-hour average ozone standard (0.08 ppm) would protect the public health against the effects of prolonged exposure and represents a tightening of the 1-hour ozone standard. For particulate matter, annual and 24-hour standards for the finest fraction of particulate, PM_{2.5} (particles less than 2.5 micrometer), was established to complement the PM₁₀ federal and state standards that target a full range of inhalable particulate matter. PM_{2.5} is estimated to be the most injurious to health and causes the greatest visibility reduction. The form of the 24-hour PM₁₀ standard was also revised. The 1-hour average ozone standard and the annual PM₁₀ standard are retained.

South Coast Air Quality Management District

California's first local air pollution control agency, the Los Angeles County Air Pollution Control District (LAAPCD), was formed in 1947 and APCDs were formed in Orange, Riverside, and San Bernardino counties not long afterward. These four agencies combined in 1976 to form the Southern California APCD, which was later replaced by the South Coast Air Quality Management District and the Mojave Desert APCD.

The South Coast Air Quality Management District was established by state legislation effective February 1, 1977, and was assigned jurisdiction over air quality in the South Coast Air Basin. The District is also responsible for air quality in the Riverside county area of the Salton Sea Air Basin (SSAB), by contract with the county. The South Coast Air Quality Management District is the name applied both to the agency and to the geographic jurisdiction which region it serves. The region encompassed by the District is shown in Figure 1-2. In 2001, the District maintained a network of 30 air monitoring stations in the Basin and an additional two in the District portions of SSAB (shown in Figure A-1 and Table A-3 in the



Attachment).

FIGURE 1-2
South Coast Air Quality Management District

South Coast, Salton Sea and Mojave Desert Air Basins

The South Coast Air Basin (Basin) has an area of 6800 square miles and the population was 15 million in 2001. It includes all of Orange county and the non-desert areas of Los Angeles, Riverside and San Bernardino counties. The Los Angeles urban area (the nation's second largest) and the Anaheim-Fullerton and Riverside-San Bernardino urban areas lie within the Basin's boundaries. About two-thirds of the Basin's population lives within Los Angeles county.

The Salton Sea Air Basin and the Mojave Desert Air Basin (MDAB) have a combined area of approximately 32,200 square miles. The two Basins include the desert portions of Los Angeles, Riverside and San Bernardino counties as well as Imperial county and part of Kern county.

The SSAB and MDAB were previously included in a single large Basin called the Southeast Desert Air Basin (SEDAB). The SEDAB also included the San Gorgonio Pass area. On May 30, 1996, the California Air Resources Board replaced the SEDAB with the SSAB and MDAB, and transferred the San Gorgonio Pass area to the Basin. In July 1997, the Antelope Valley area of MDAB was separated from the District and incorporated into a new air district under the jurisdiction of the newly formed Antelope Valley Air Pollution Control District (AVAPCD).

The South Coast Air Quality Management District has the jurisdiction over the Coachella Valley portion of Riverside county in SSAB. The population in the SSAB portion under the jurisdiction of the District is about 300,000. The District also has the jurisdiction over a small portion of the MDAB in eastern Riverside county. The area is sparsely populated desert.

Weather

The South Coast Air Basin is arid, with virtually no rainfall and abundant sunshine during the summer months. It has light winds and poor vertical mixing compared to the other large urban areas in the U.S. The combination of poor dispersion and abundant sunshine provide conditions especially favorable to the formation of photochemical smog. The Basin is also bounded to the north and east by mountains with maximum elevations exceeding 10,000 feet. The unfavorable combination of meteorology, topography, and emissions from the nation's second largest urban area result in the Basin having the worst air quality in the U.S. More detailed information on Basin climatology appeared in a previous District publication.

Emissions

The amount of each of the major pollutants emitted into the atmosphere of the Basin in 1997 is shown in Figure 1-3. In 1997, approximately 7800 tons of carbon monoxide (CO), 1400 tons of oxides of nitrogen (NO_x), 1200 tons of volatile organic compounds (VOC), 80 tons of oxides of sulfur (SO_x), 330 tons of directly emitted particulate (PM10), 120 tons of finer particulate (PM2.5), and 600 tons of total suspended particulate (TSP) were emitted into the Basin's atmosphere each day. (Additional PM10 forms by chemical reaction of the gaseous pollutants.) Emissions vary relatively little by season, but there are large seasonal differences in the atmospheric concentrations of pollutants due to seasonal variations in the weather. (Details of the 1997 emissions inventory are contained in Appendix III.)

Volatile organic compounds and oxides of nitrogen are precursors of ozone. Oxides of nitrogen and volatile organic compounds also react to form nitrates and solid organic compounds, which are a significant fraction of PM10. Sulfur dioxide reacts to form sulfates which are likewise significant contributors to the Basin's PM10 and PM2.5. In addition to the PM10 formed by reaction of gaseous precursors, there is directly emitted PM10, most of which is attributed to fugitive dust sources such as re-entrained road dust, construction activities, farming operations and wind-blown dust.

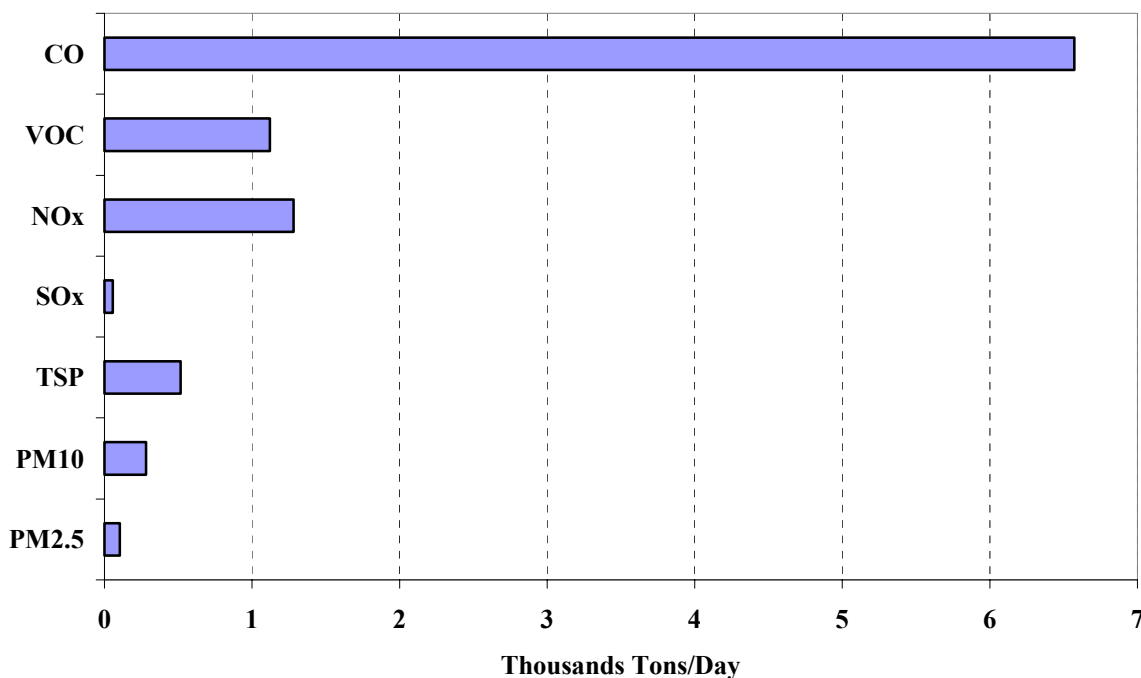


FIGURE 1-3
1997 Average Daily Emissions in the Basin

Air Quality Trends

In 2001, the SCAB locations exceeded one or more of the federal standards on 37 days (excluding the recently adopted 8-hour ozone and PM2.5 standards exceedances).

Figure 1-4 shows the long-term annual trend of percent "basin-days" exceedances of the federal standards. (A "basin-day" is recorded if any location in the South Coast Air Basin exceeds the standard. Multiple locations exceeding on the same day count as a single basin-day.)

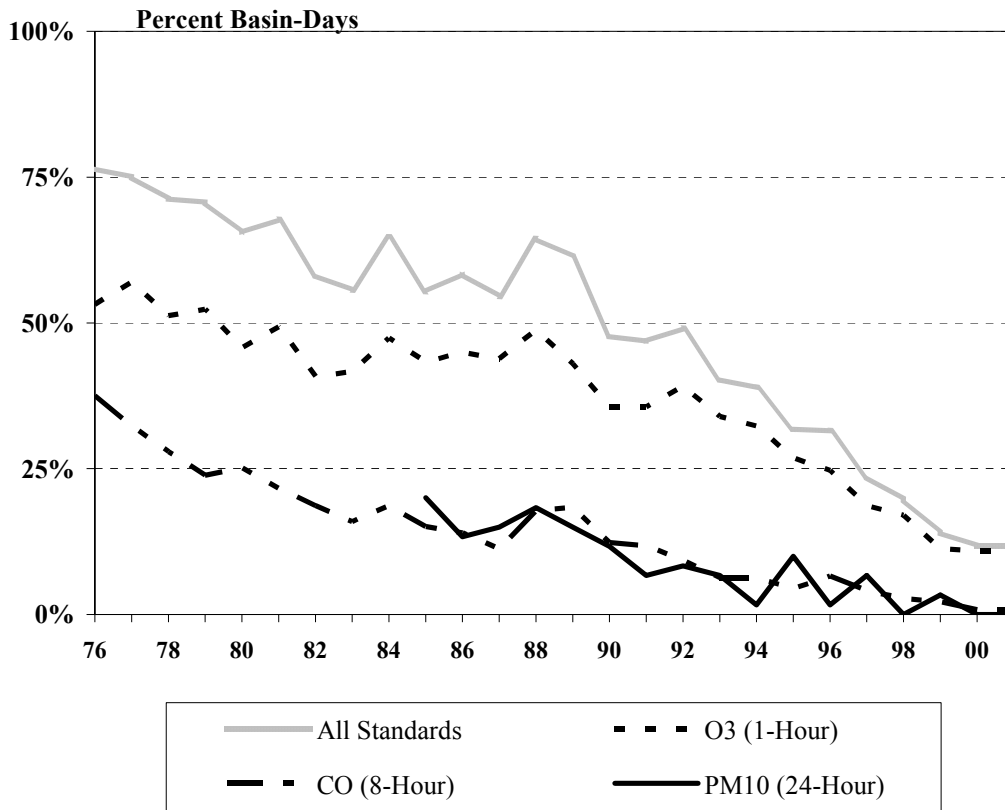


FIGURE 1-4
Percent Basin-Days Exceeding the Federal Standards, 1976-2001

Air Quality in the District Compared to Other Areas of the U.S.

Despite the significant downtrend, the South Coast Air Basin still has some of the worst air quality in the nation in terms of the annual number of days exceeding the federal standards. In 2001, the highest U.S. location in terms of number of days over the federal ozone standard was located in the Basin (Central San Bernardino

Mountains, 26 days). Other area with the greatest number of exceedances outside California was located in the Houston Metropolitan Area, Texas (10 days). Figure 1-5 shows the average number of days on which the federal ozone standard was exceeded at U.S. locations for the years 1998-2000.

Over the past decade, reductions in vehicular emissions have reduced carbon monoxide levels throughout the U.S., and many areas have ceased violating the standards. In 2001, the Basin continued to rank among the areas of the U.S. with high 8-hour average carbon monoxide concentration, although it did not exceed the standards.

The Basin exceeded the federal 24-hour average and annual PM10 standards in a few areas in 2001. The highest 24-hour average PM10 concentration in the U.S. was recorded at a location in the Great Basin Valleys Air Basin in California. More detailed information on air quality in the U.S. is available in EPA's annual National Air Quality and Emissions Trend Report.

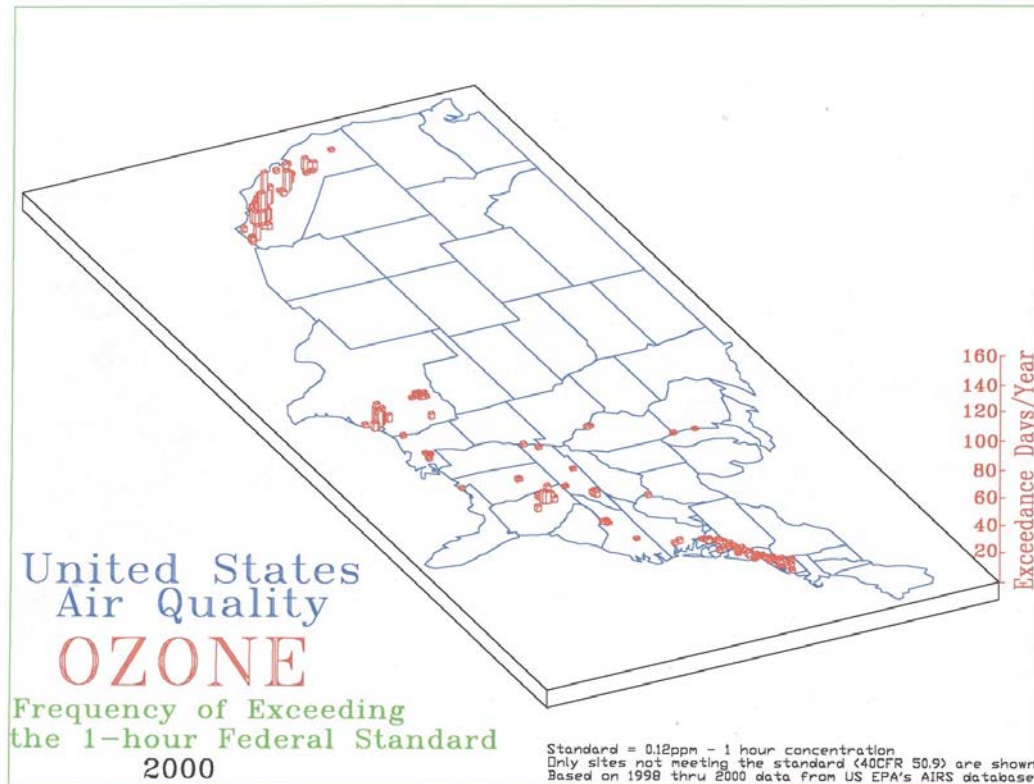


FIGURE 1-5
OZONE, 1998-2000
 Average Number of Days Exceeding the Federal Standard

The following two chapters of this report summarize current air quality in the District. Analyses are presented for:

- Ozone (O₃)
- Carbon monoxide (CO)
- Nitrogen dioxide (NO₂)
- Sulfur dioxide (SO₂)
- Particulate matter (PM10)
- Particulate matter (PM2.5)
- Lead (Pb)
- Sulfate (SO₄²⁻)

Chapters 2 and 3 contain summaries of air quality in the South Coast Air Basin, and the Riverside county portion of Salton Sea Air Basin, respectively. Salton Sea Air Basin includes Coachella Valley. For those pollutants still designated as nonattainment, maps are presented which show how air quality varies in different areas in the Basin. Detailed air quality statistics for each of the District's monitoring locations in the Basin and SSAB are contained in the attachment to this report.

A brief update of air quality trends through 2001 are presented in this report. Detailed analyses of air quality trends in the Basin are available in Appendix II of the 1997 AQMP and the December editions of the Air Quality Standards Compliance Reports (AQSCR's).

CHAPTER 2

AIR QUALITY IN THE SOUTH COAST AIR BASIN

AIR QUALITY IN THE SOUTH COAST AIR BASIN

The maximum pollutant concentrations recorded at District monitoring stations in 2001 (Figure 1-1 in Chapter 1) were all recorded in the densely populated South Coast Air Basin. However, air quality in the Basin varies widely by season and by area.

The prevailing daytime sea breeze tends to transport pollutants from coastal areas into the Basin's inland valleys, and from there, still further inland into neighboring areas of Salton Sea Air Basin of the District as well as the MDAB. Concentrations of primary pollutants (those emitted directly into the air) are typically highest close to the sources which emit them. However, secondary pollutants (those formed in the air by chemical reaction of precursors) reach maximum concentrations some distance downwind of the sources that emit the precursors, due to the fact that the polluted air mass is moved inland many miles by the prevailing winds before maximum concentrations are reached.

The Basin's air quality varies with season due to seasonal differences in the weather. In Figure 2-1, the number of days exceeding federal standards for each criteria pollutant is shown for each month of 2001. All of the ozone exceedances occurred during the May to October "smog season." Particulate matter (PM₁₀ and PM_{2.5}) standards are exceeded at times throughout the year and do not have a clear pattern like ozone and carbon monoxide. PM_{2.5} exceedances, however, typically occur more frequently during late fall and early winter months. The standards were exceeded on a total of 54 days in 2001 (37 days excluding PM_{2.5}).

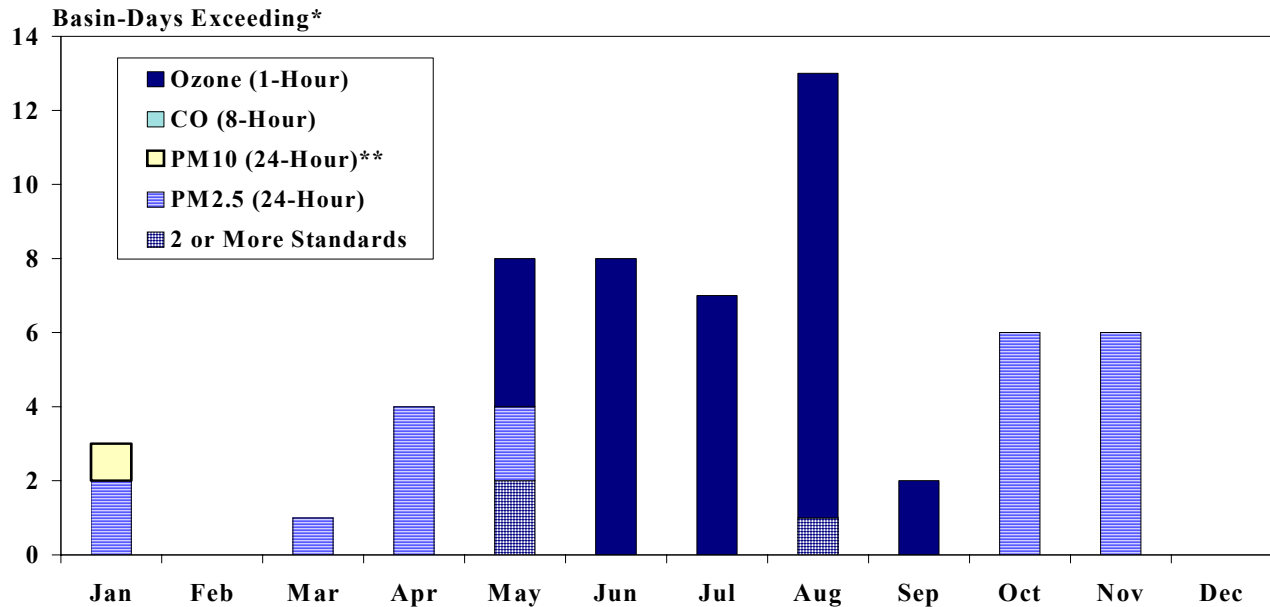
Ozone (O₃)

Properties

The Basin's unique air pollution problem first began to be recognized in the 1940's. Unlike the smog in many other urban areas, the Los Angeles smog was worse in summer. Early research showed that ozone was being formed in the Basin's atmosphere from hydrocarbons and oxides of nitrogen being emitted into the air in the presence of steady sunshine. Regular monitoring of total oxidants was begun by the Los Angeles Air Pollution Control District (LAAPCD) in the 1950's, and annual maximum 1-hour ozone concentrations in excess of 0.6 ppm were recorded at that time.

Ozone (O₃), a colorless gas with a sharp odor, is a highly reactive form of oxygen. High ozone concentrations exist naturally in the stratosphere. Some mixing of stratospheric ozone downward through the troposphere to the earth's surface does occur; however, the extent of ozone transport is limited. At the earth's surface in

sites remote from urban areas ozone concentrations are normally very low (0.03-0.05 ppm).



* Basin-days represents the number of days a standard was exceeded anywhere in the Basin.

** Number of exceedances due to PM10 may have been higher, since PM10 samples are collected every 6 days (or every 3 days at a few sites).

FIGURE 2-1

Monthly Number of Days Exceeding Federal Standards in 2001

In urban areas, ozone is formed by a complicated series of chemical and photochemical reactions between reactive organic compounds, nitrogen oxides, and the oxygen in the air. A decrease in ozone precursors may or may not give a decrease in ozone. Ozone concentrations are dependent not only on overall precursor emissions, but on the ratio of hydrocarbon concentration to oxides of nitrogen concentration, the reactivity of the specific hydrocarbons present, the spatial and temporal distribution of emissions, and weather.

While ozone is beneficial in the stratosphere because it filters out skin-cancer-causing ultraviolet radiation, it is a highly reactive oxidant. It is this reactivity which accounts for its damaging effects on materials, plants, and human health at the earth's surface.

The propensity of ozone for reacting with organic materials causes it to be damaging to living cells, and ambient ozone concentrations in the Basin are frequently sufficient to cause health effects. Ozone enters the human body primarily through the respiratory tract and causes respiratory irritation and discomfort, makes breathing more difficult during exercise, and reduces the respiratory system's ability

to remove inhaled particles and fight infection. People with respiratory diseases, children, the elderly, and people who exercise heavily are more susceptible to the effects of ozone.

Plants are sensitive to ozone at concentrations well below the health-based standards and ozone is responsible for significant crop damage. Ozone is also responsible for damage to forests and other ecosystems.

Federal 8-Hour Ozone Standard

Studies have shown that even relatively low concentrations of ozone, if continued for several hours, can significantly reduce lung function in normal healthy people. In July 1997, the U.S. Environmental Protection Agency (U.S. EPA) adopted an 8-hour average federal ozone standard with a level of 0.08 ppm. The new standard was based on exposure studies reporting health effects associated with long-term (6 to 8 hours) exposures at levels below the level of the 1-hour standard. The 8-hour ozone standard is more stringent than the 1-hour standard and provides greater protection to public health than the 1-hour standard. It will help protect people who spend a significant amount of time working or playing outdoors -- a group that is particularly vulnerable to the effects of ozone. The federal 1-hour ozone standard continues to apply in non-attainment areas (including the District), where the standard is still violated.

The effect of the adopted 8-hour ozone standard on this region's attainment of federal ozone standards has been evaluated by comparing the number of exceedances of the 1-hour standard (0.12 ppm 1-hour average) with the number of exceedances of 8-hour average concentrations of 0.08 ppm. The number of exceedances in different areas in the Basin and SSAB vary; however, there are a greater number of days exceeding the federal 8-hour ozone standard level in most areas, especially in the inland valleys and adjacent mountains where high ozone concentrations normally occur.

Current Ozone Air Quality

In 2001, the District measured ozone concentrations at 28 regular ambient monitoring locations. The maximum 1-hour average and 8-hour ozone concentrations in the Basin in 2001 (0.190 ppm and 0.144) were 152% and 169% of the federal 1-hour and 8-hour standards, respectively, and 190% of the state standard. The federal 1-hour ozone standard was exceeded at one or more Basin locations on a total of 36 days, the 8-hour standard was exceeded on 100 days. The California state standard was exceeded on 121 days, and the health advisory level on 15 days. The stage 1 episode level (1-hour average ≥ 0.20 ppm) was not exceeded anywhere in the Basin for the third consecutive year.

Figure 2-2 is a contour diagram of the number of days exceeding the 1-hour federal ozone standard in different areas of the Basin in 2001. The standard was exceeded most frequently in the Basin's Central San Bernardino Mountains and adjacent valleys. The coastal areas of Los Angeles and Orange counties and areas near the boundary between the Basin and San Diego county did not exceed the 1-hour federal ozone standard.

The more stringent state standard was exceeded almost everywhere in the Basin with the greatest number of exceedances occurring in the Central San Bernardino Mountains and adjacent valleys (not shown).

A decade ago, only the coastal areas of the Basin did not record exceedances of the stage 1 episode level (1-hour average O₃ greater than or equal to 0.20 ppm). In 2001, stage 1 episodes were not recorded anywhere in the Basin. In addition, there have been no exceedances of the stage 2 episode level (1-hour average O₃ greater than or equal to 0.35 ppm) since 1988 and the stage 3 episode level (1-hour average O₃ greater than or equal to 0.50 ppm) has not been exceeded since 1974.

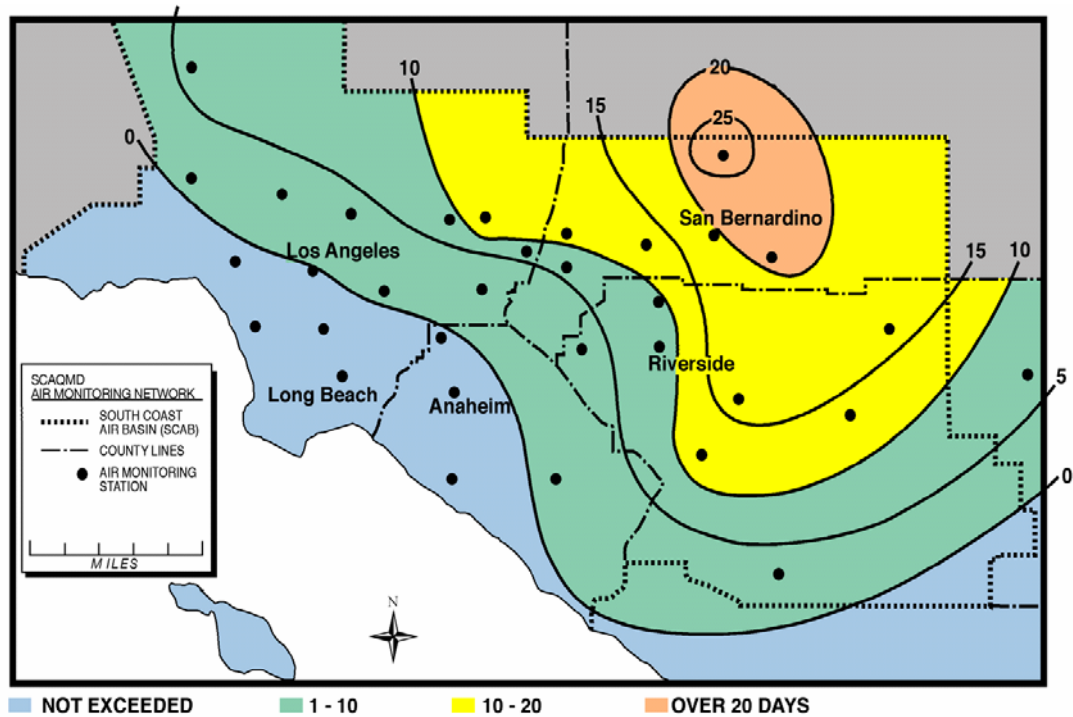


FIGURE 2-2
OZONE - 2001
Number of Days Exceeding 1-Hour Federal Standard
(1-hour average ozone > 0.12 ppm)

Figure 2-3 shows the number of days exceeding the 8-hour federal standard in the Basin in 2001. The 8-hour federal ozone standard was also exceeded most frequently in the Basin's Central San Bernardino Mountains and adjacent areas. The federal standards were not exceeded in the coastal areas.

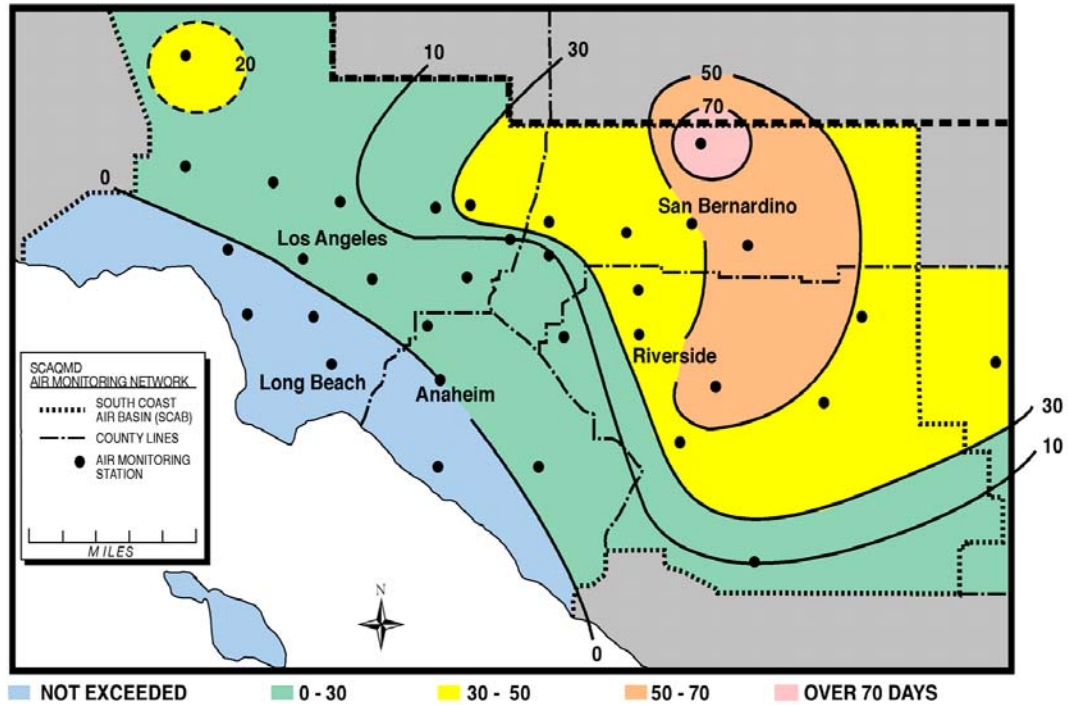


FIGURE 2-3
OZONE - 2001
 Number of Days Exceeding 8-Hour Federal Standard
 (8-hour average ozone > 0.08 ppm)

Table A-4 in the Attachment shows the number of exceedances of the 1-hour federal ozone standard at all District air monitoring sites, for all years for which data was available during the period 1976-2001. Tables A-5 and A-6 show the number of days exceeding stage 1 and stage 2 episode levels and the maximum 1-hour ozone concentrations.

Seasonal Variation

Because photochemical reactions require sunlight to proceed, ozone formation is favored by strong solar radiation. Solar radiation is more intense and of longer duration, and temperature inversions are stronger and more persistent, in summer than in winter. This causes ozone concentrations to be higher in summer than in winter. Peak ozone concentrations generally occur near the middle of the day during the period May through October.

Figure 2-4 shows the 5-year average of number of days per month exceeding the federal ozone standard for the period 1976-2000. Up until the late 1980's it was common to have days exceeding the federal ozone standard as early as February and as late as November and December. In late 1990's (since 1996) there have been no federal standard exceedances recorded in the months of January-March and November-December. Also, the frequency of exceedances in fall (September and October) has been reduced significantly in the recent years.

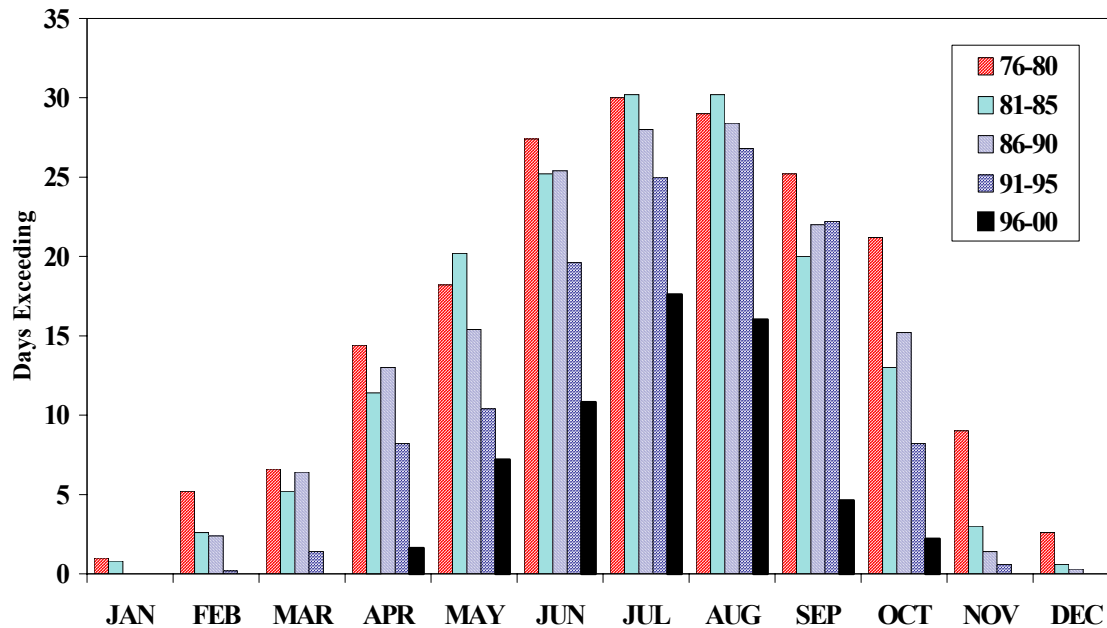


FIGURE 2-4
5-Year Average of Number of Days Per Month
Exceeding Federal Ozone Standard in the Basin

Diurnal Variation

Because time and sunlight are required for the precursor organic gases and nitrogen oxides to react to form ozone, peak ozone concentrations usually occur from afternoon to early evening. By this time, the prevailing sea breeze has moved the polluted air mass miles inland from the major sources of precursor emissions. Figure 2-5 illustrates the maximum ozone concentrations for each hour of the day for the smog season (May-October) of 2001 at three representative areas in the Basin. The diurnal pattern in these areas, coastal area of Los Angeles county, inland valley area and San Bernardino mountain area, depicts diurnal formation and impact of ozone transport.

Ozone concentrations in the Basin are typically low during early morning hours, increasing rapidly after sunrise and peaking in the afternoon. However, peak concentrations occur earlier in the day for coastal areas and later in the day for locations further downwind. Examining diurnal variation throughout the District, the time of the peak concentration was found to vary from noon - 1 p.m. PST in coastal-central Los Angeles county, to 4 - 7 p.m. in the farthest inland Basin and SSAB locations.

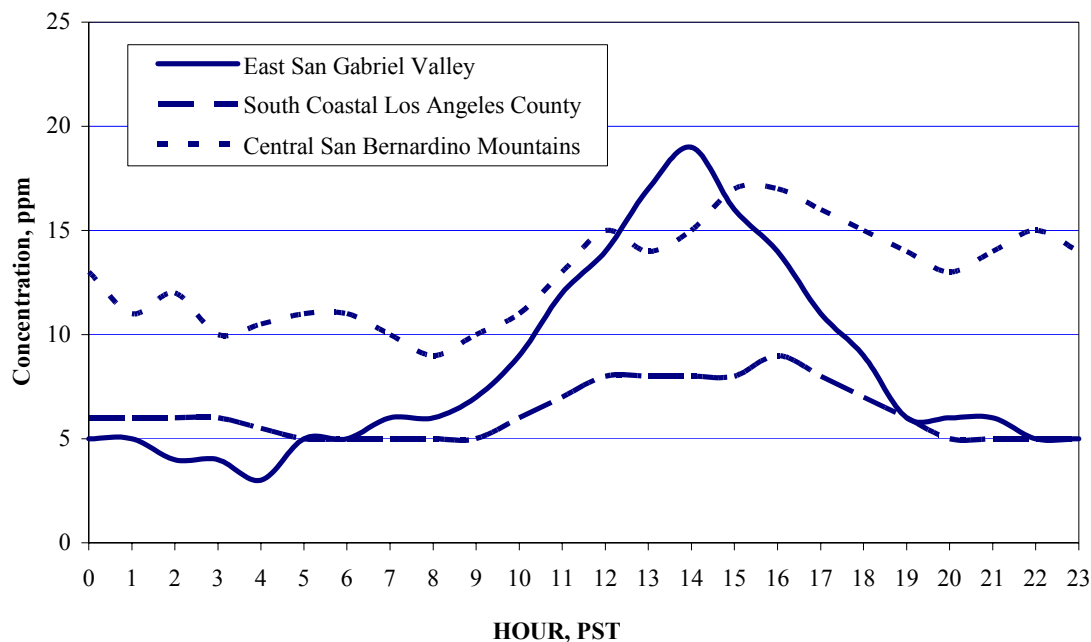


FIGURE 2-5
OZONE
Diurnal Variation, May-October 2001
Maximum Concentration for Each Hour

In East San Gabriel Valley, an area typical of the inland valley areas of the Basin where high ozone concentrations occur, concentrations are usually low at night and remain relatively low until mid-morning, reaching peak concentrations in the afternoon around 1 - 3 p.m. Diurnal variation in the South Coastal Los Angeles county area where ozone concentrations are typically low, show a similar pattern except that the peak concentrations are lower. In the mountain area where the Basin's highest concentrations have been recorded in recent years, concentrations are usually higher all the times and the peak is reached later in the afternoon around 4 - 5 p.m. and remains relatively high through out the evening hours during the smog season.

Day-of-Week Variation

Since the mid-1970s, it has been documented that ozone concentrations in the Basin are higher on weekends than on weekdays, in spite of the fact that ozone pollutant precursors are lower on weekends than on weekdays. Similar effects have been observed in some other metropolitan areas in the nation such as San Francisco, Washington D.C., Philadelphia and New York.

Figure 2-6 shows the three-year average number of exceedances of the federal 1-hour ozone standard for each day of the week in the Basin for the period 1999-2001. The number of exceedances was higher on Sundays followed by Saturdays. Fridays

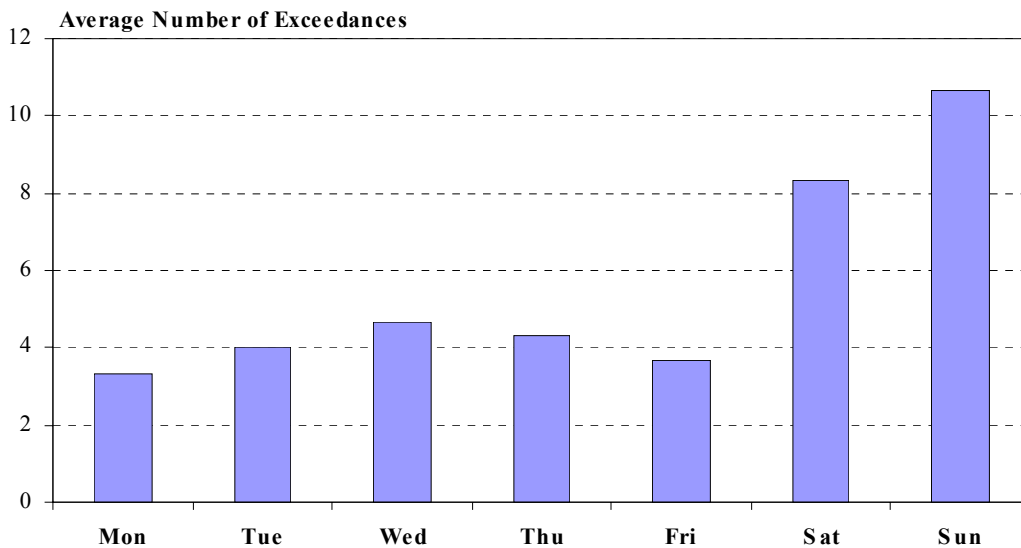


FIGURE 2-6
OZONE
Day-of-Week Variation, 1999-2001
Exceedances of the Federal Standard by Day of Week

exceeded least. Average ozone concentrations also show a pattern similar to the average number of exceedances, with weekends tending to be higher than weekdays. The California Air Resources Board (ARB) has sponsored several research projects to study the causes of elevated ozone levels on weekends in the Basin. Changes in daily patterns that impact the quantity and temporal loading of emissions have been suggested as strongly contributing to observations. Carryover of matured precursor from weekdays to weekends is also suggested as contributing factor.

Carbon Monoxide (CO)

Properties

Carbon monoxide (CO) is a colorless, odorless, relatively inert gas. It is a trace constituent in the unpolluted troposphere, and is produced by both natural processes and human activities. In remote areas far from human habitation, carbon monoxide occurs in air at an average background concentration of 0.04 ppm, primarily as a result of natural processes such as forest fires and the oxidation of methane. Global atmospheric mixing of CO from urban and industrial sources creates higher background concentrations (up to 0.20 ppm) near urban areas. The major source of CO in urban areas is incomplete combustion of carbon-containing fuels, mainly gasoline. In 1997, 97% of the CO emitted into the Basin's atmosphere was from mobile sources. Consequently, CO concentrations are generally highest in the vicinity of major concentrations of vehicular traffic.

Carbon monoxide is a primary pollutant, meaning that it is directly emitted into the air, not formed in the atmosphere by chemical reaction of precursors, as is the case with ozone and other secondary pollutants. Ambient concentrations of CO in the Basin exhibit large spatial and temporal variations, due to variations in the rate at which CO is emitted, and in the meteorological conditions that govern transport and dilution. Unlike ozone, CO tends to reach high concentrations in the fall and winter months. The highest concentrations frequently occur on weekdays at times consistent with rush hour traffic and late night during the coolest, most stable portion of the day.

When carbon monoxide is inhaled in sufficient concentration, it can displace oxygen and bind with the hemoglobin in the blood, reducing the capacity of the blood to carry oxygen. Individuals most at risk from the effects of CO include heart patients, fetuses (unborn babies), smokers, and people who exercise heavily. Normal healthy individuals are affected at higher concentrations, which may cause impairment of manual dexterity, vision, learning ability, and performance of work. The results of studies concerning the combined effects of CO and other pollutants in animals have shown a synergistic effect after exposure to CO and ozone.

Current Carbon Monoxide Air Quality

The District currently monitors carbon monoxide air quality at 23 of its 32 air monitoring stations. The highest CO concentrations are found in coastal and central Los Angeles county. The highest 8-hour average CO concentration in 2001 (7.71 ppm) was recorded in South Central Los Angeles county and was 81% of the federal standard and 85% of the state standard. This was the lowest concentration recorded in the Basin since carbon monoxide monitoring began in this region. The highest 1-hour average concentration in 2001 (12.0 ppm) was 33% of the federal and 57% of the state 1-hour standards. Concentrations in the less urbanized areas of the Basin and in the SSAB were well below the standards.

In 2001, for the first time since monitoring began, carbon monoxide standards were not exceeded anywhere in the Basin. The Basin, however, continued to rank in the nation among the locations with the highest carbon monoxide concentrations. Figure 2-7 shows the distribution of maximum 8-hour average carbon monoxide concentrations in the Basin in 2001. Highest concentrations were recorded in Los Angeles county areas, in the areas of South Central Los Angeles county and West San Fernando Valley. There have been no exceedances of the stage 1 episode (federal alert) level (8-hour average CO greater than or equal to 15 ppm) since 1994.

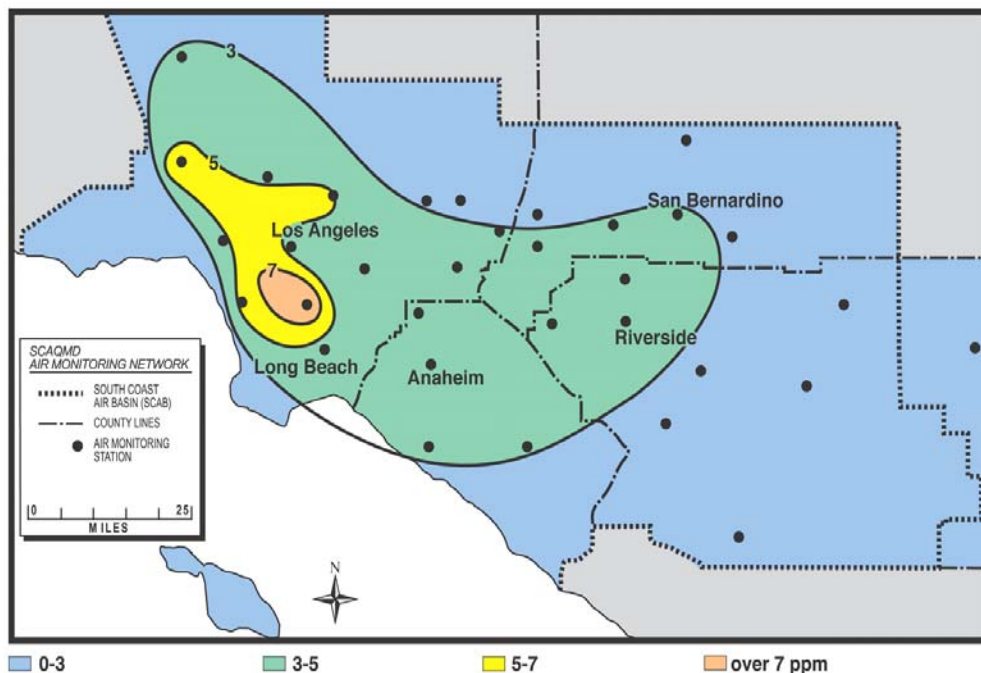


FIGURE 2-7
CARBON MONOXIDE - 2001
Maximum 8-Hour Average Concentration, ppm

The annual number of days exceeding the federal carbon monoxide standard at all monitoring sites during the period 1976-2001 is given in Table A-7 in Attachment. Tables A-8 and A-9 show the annual number of federal alerts and maximum CO concentrations for all sites for the years 1976-2001.

Seasonal Variation

Carbon monoxide concentrations in the Basin tend to be highest in the late fall and winter months. This is due mainly to meteorological conditions which occur more frequently in late fall and winter; specifically, light winds and late night and early morning radiation inversions, which inhibit the vertical dispersion of pollutants. Also, mobile sources produce more CO emissions in colder temperatures. Figure 2-8 shows the three-year average monthly number of exceedances of the federal CO standard for the years 1999-2001 in the Basin. In the late fall and winter months, the actual number of exceedances for each of the three years 1999-2001 ranged from one day to four days per month in January and December. No exceedances of the CO standards were recorded during February through November of the years 1999-2001.

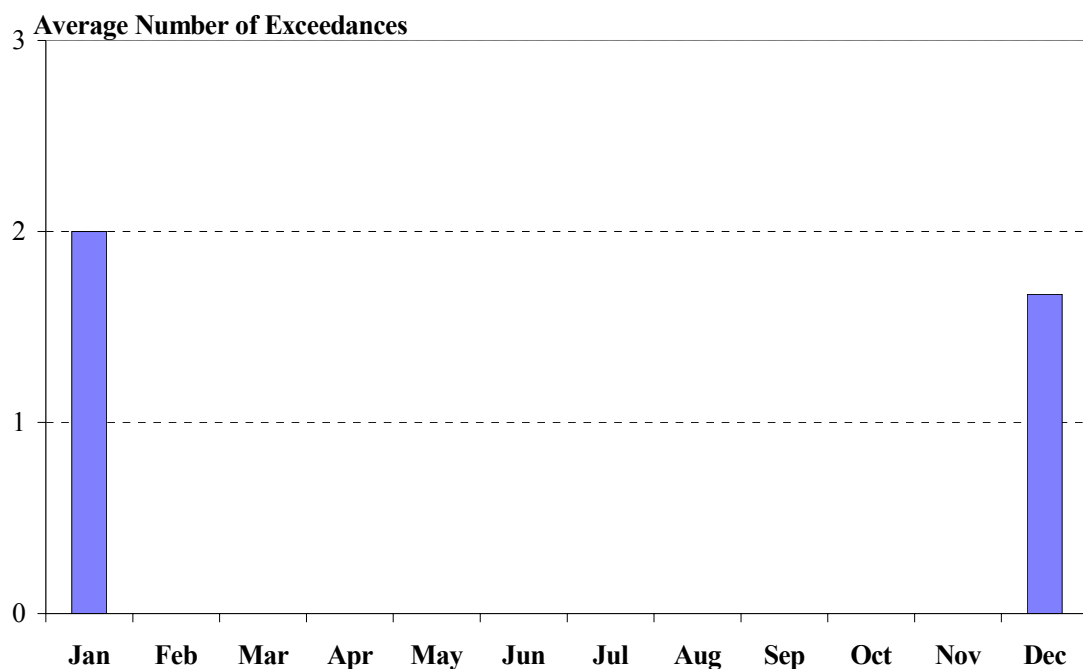
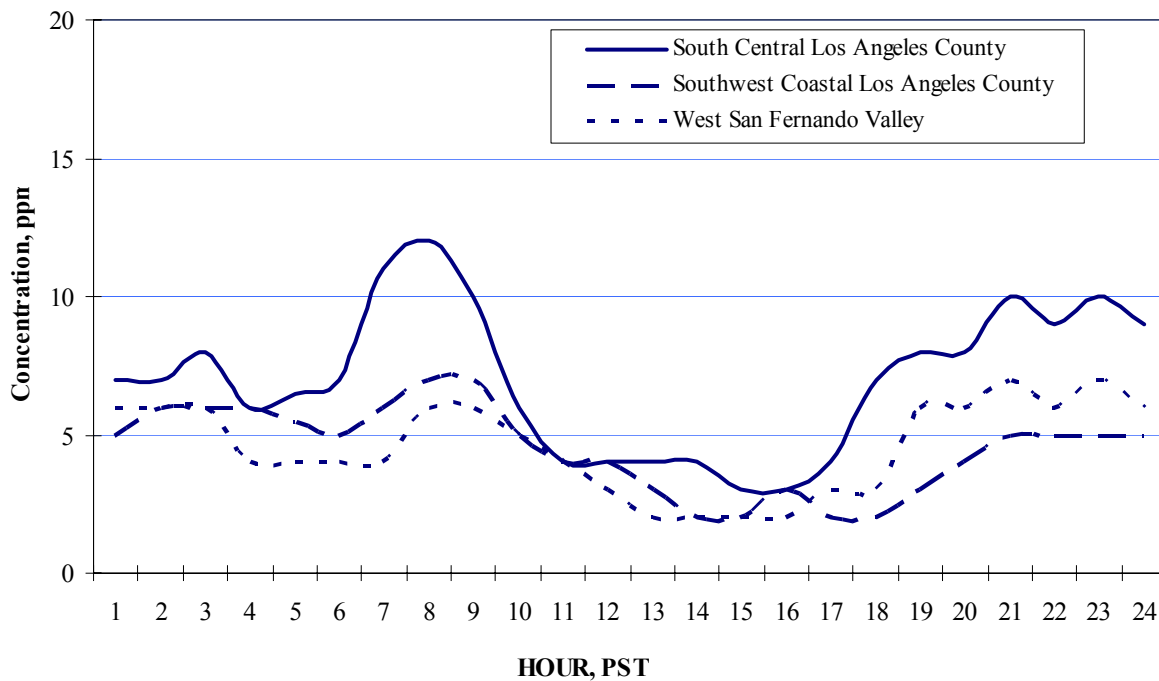


FIGURE 2-8
CARBON MONOXIDE
Seasonal Variation, 1999-2001
Average Monthly Exceedances of Federal Standard

Diurnal Variation

Figure 2-9 shows the maximum concentration of carbon monoxide for each hour of the day for the winter months (January, February, November and December) of 2001 in the Basin areas where typically higher CO concentrations are recorded, all located in Los Angeles county. On average, the CO concentration exhibits two peaks: first at around 7 - 8 a.m., the time of morning rush traffic congestion. A second peak is typically observed at 10 - 11 p.m. after the evening commute. Hourly concentrations during the summer months were relatively low at all hours, with the peak concentration for winter averaging more than two times higher than the average peak concentration for summer. The seasonal and diurnal patterns in these Los Angeles county areas are typical of those found at most locations in the



District.

FIGURE 2-9
CARBON MONOXIDE
Diurnal Variation, 2001
Maximum Concentration for Each Hour

Day-of-Week Variation

Concentrations of carbon monoxide and exceedances of the carbon monoxide standards have been found to vary significantly with day of week. This is due to variation in vehicular traffic and CO emissions by day of week. Figure 2-10 shows the three-year average maximum hourly concentrations for each day of the week in the South Central Los Angeles county area during the period 1999-2001. The average concentration for weekends (due primarily to Sunday) was lower than the average concentration for weekdays (Monday to Friday). A similar pattern has been observed for day-of-week variation at most locations in the District.

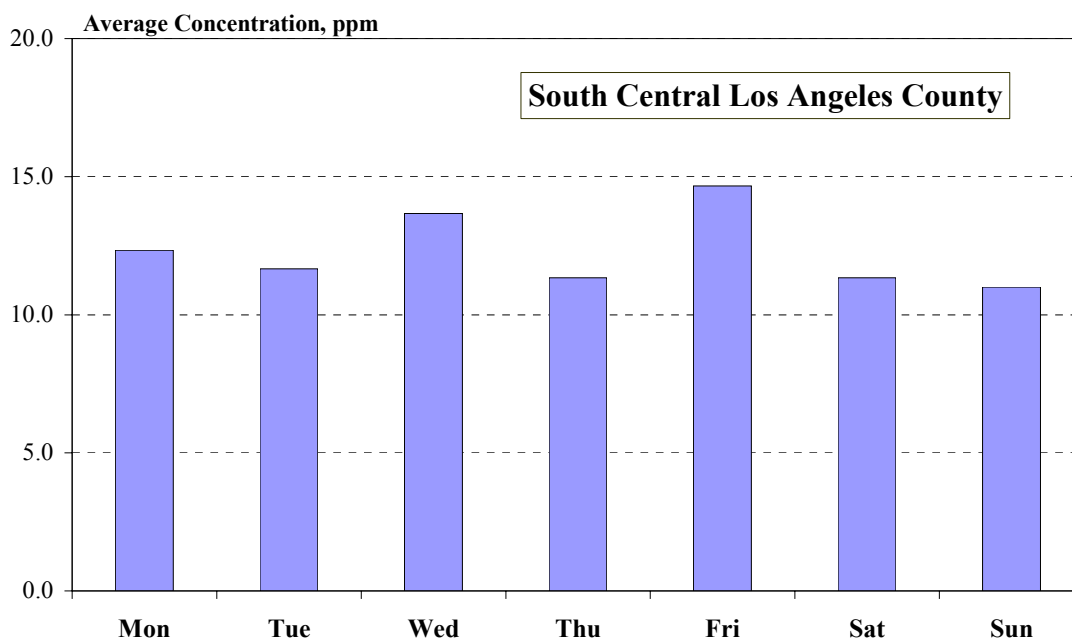


FIGURE 2-10
CARBON MONOXIDE
Day-of-Week Variation, 1999-2001
Average Concentrations by Day of Week

Suspended Particulate Matter

Total suspended particulate (TSP) is the name applied to the complex mixture of solid material suspended in the atmosphere. TSP is collected on a glass fiber filter by means of a high volume sampler. Samples are collected for a 24-hour period every sixth day, and then returned to the District laboratory for chemical analysis to determine the relative concentrations of sulfate, nitrate and lead. The federal and state standards for lead and sulfate are based on analyses of TSP samples. In 2001, TSP samples were collected by the District at 13 sites. These samples were analyzed for sulfate and nitrate and were found to contain an average of from 5 to 19 percent sulfate and 5 to 21 percent nitrate, depending on location. Lead concentrations were determined for 9 of the sites, and the average lead concentration ranged from 0.03 to 0.06 percent of the TSP.

The fine fraction of TSP has greater effects on health and visibility than the coarse fraction. In 1987 EPA adopted PM₁₀ standards, which replaced the earlier TSP standards. PM₁₀ samples are collected on quartz filters with a size selective inlet high volume sampler. The District began PM₁₀ monitoring in late 1984.

In 1997, the U.S. EPA adopted new federal air quality standards for finer particulate matter, PM_{2.5}, to complement existing PM₁₀ standards that target the full range of inhalable particulate matter. In compliance with the adopted standard, the District monitored PM_{2.5} concentrations at 18 sites in 2001.

Suspended Particulate Matter (PM₁₀)

Properties

Of greatest concern to public health are the particles small enough to be inhaled into the deepest parts of the lung. Respirable particles (particulate matter less than about 10 micrometers in diameter) can accumulate in the respiratory system and aggravate health problems such as asthma, bronchitis and other lung diseases. Children, the elderly, exercising adults, and those suffering from asthma are especially vulnerable to PM₁₀'s adverse health effects.

PM₁₀ particles are both directly emitted or formed from diverse emission sources. Major sources of directly emitted (primary) PM₁₀ include re-suspended road dust or soil entrained into the atmosphere by wind or activities such as construction and agriculture. Other components of PM₁₀ form in the atmosphere (secondary PM₁₀) from precursor emissions of the gaseous pollutants.

In 2001, the District measured PM₁₀ concentrations at 18 locations. At the 7 locations where both PM₁₀ and TSP were monitored, PM₁₀ averaged 50 to 76% of TSP. PM₁₀

samples are routinely analyzed for sulfate and nitrate, and in 2001 sulfates constituted an average of 7 to 18% of PM_{10} , and nitrates constituted 4 to 18% of PM_{10} .

An intensive study of PM_{10} was conducted at six locations in 1995, using special samplers designed to allow detailed chemical analyses of PM_{10} . The study sites included five Basin locations in Central Orange county (CEOC), Central Los Angeles county (CELA), Pomona/Walnut Valley (PWV), Central San Bernardino Valley (CSBV), and Metropolitan Riverside county (MRIV) areas and one remote area in San Nicolas Island (SANI).

Figure 2-11 shows the average amounts of sulfate ($SO_4^{=}$), nitrate (NO_3^-), ammonium (NH_4^+), organic carbon (OC), elemental carbon (EC), sodium (Na^+), chloride (Cl^-), and other materials such as soil components in the PM_{10} samples which were collected during 1995. Sulfates, nitrates, and organic carbon are typically formed in the air by reaction of gaseous precursors such as oxides of nitrogen, oxides of sulfur, volatile organic compounds (hydrocarbons and related compounds) and ammonia, which are emitted by a variety of sources. Soil-related materials tend to be larger particles which are suspended in the air by human activity or by wind.

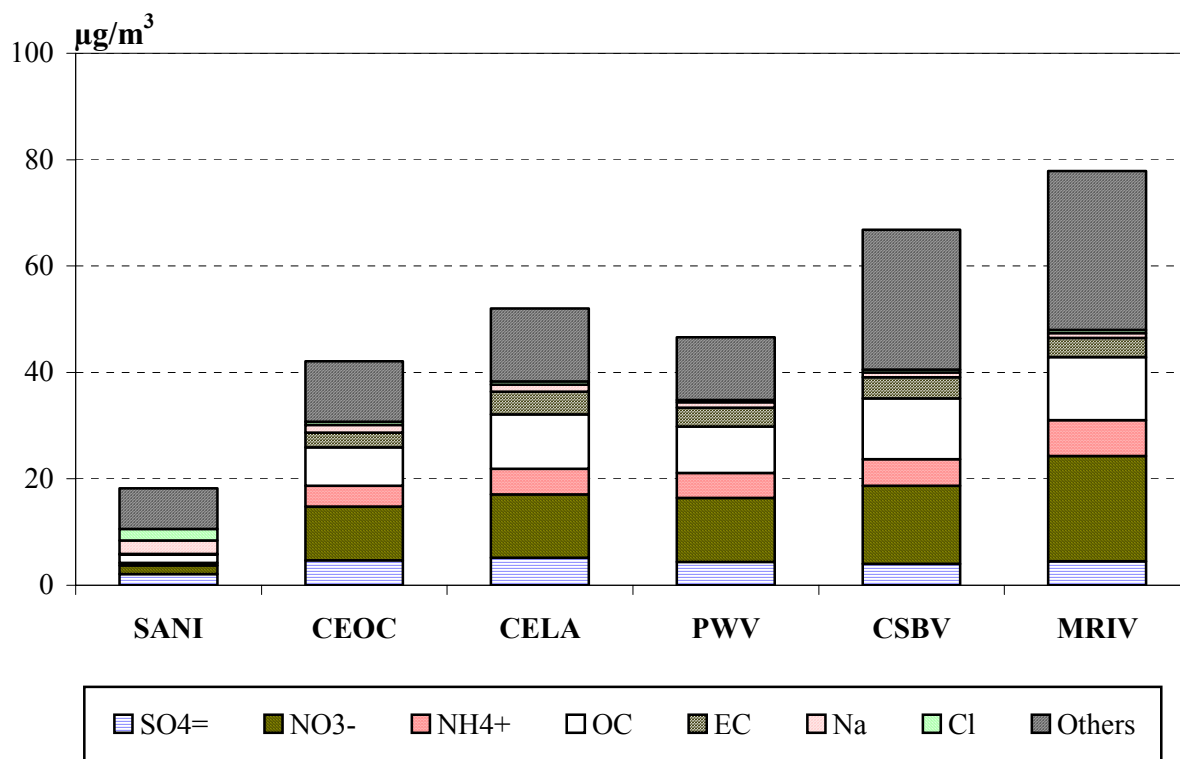


FIGURE 2-11
Chemical Composition of PM_{10} , 1995

San Nicolas Island, 80 miles offshore and remote from the Basin's urban areas, recorded a very low average PM₁₀ (18 µg/m³), which contained a relatively large fraction of Na and Cl (25% of the PM₁₀). The relatively high Na and Cl is due to the influx of sea salt from the surrounding ocean. The concentrations of, and in most cases percentages of, the other components (NH₄⁺, NO₃⁻, SO₄⁼, OC, EC, crustal material) were low compared to mainland Basin sites.

PM₁₀ annual concentrations measured at the five Basin locations recorded PM₁₀ concentrations from 42 µg/m³ to 78 µg/m³. These Basin sites contain relatively high proportions of sulfates (6-11%), nitrates (22-26%), organic carbon(15-20%), and elemental carbon (5-8%). These materials derive from stationary or mobile sources of pollution in the Basin. The amount of soil-related material in the air is also greater (17% to 31%), due to suspension of soil in the air by human activities such as re-entrainment of road dust and construction.

Current PM₁₀ Air Quality

In 2001, the District measured PM₁₀ concentrations at 18 locations throughout the South Coast and Salton Sea Air Basins. Figure 2-12 shows for 2001 the annual average (arithmetic mean) PM₁₀ concentrations in the Basin. The area which exceeded the federal standard (inside the dashed line) is limited to the areas of Riverside and San Bernardino counties close to Metropolitan Riverside county. The maximum annual average recorded (63.1 µg/m³ in the Metropolitan Riverside county area) was 125% of the federal standard.

The federal 24-hour standard was exceeded at two Basin locations in the inland valley areas 2001 (not shown). The maximum 24-hour average concentration (219 µg/m³ recorded in Metropolitan Riverside county) was 146% of the federal 24-hour standard.

The more stringent state annual standard was exceeded in a much larger area than the federal annual standard, with most of the Basin and part of the Riverside county SSAB recording annual average concentrations above the standard. The maximum annual average (annual geometric mean PM₁₀ 54.3 µg/m³, recorded at Metropolitan Riverside county) was 180% of the state annual standard.

The state 24-hour PM₁₀ standard was exceeded at all locations monitored in the District. The standard was exceeded most frequently in the Basin's inland valleys, centering in Metropolitan Riverside county. The maximum 24-hour average was 429% of the state 24-hour standard.

The annual arithmetic and geometric mean, the percent of days exceeding state and federal standards, and the maximum 24-hour average concentration for the years 1985 - 2001 are given in Tables A-10 to A-13 in Attachment.

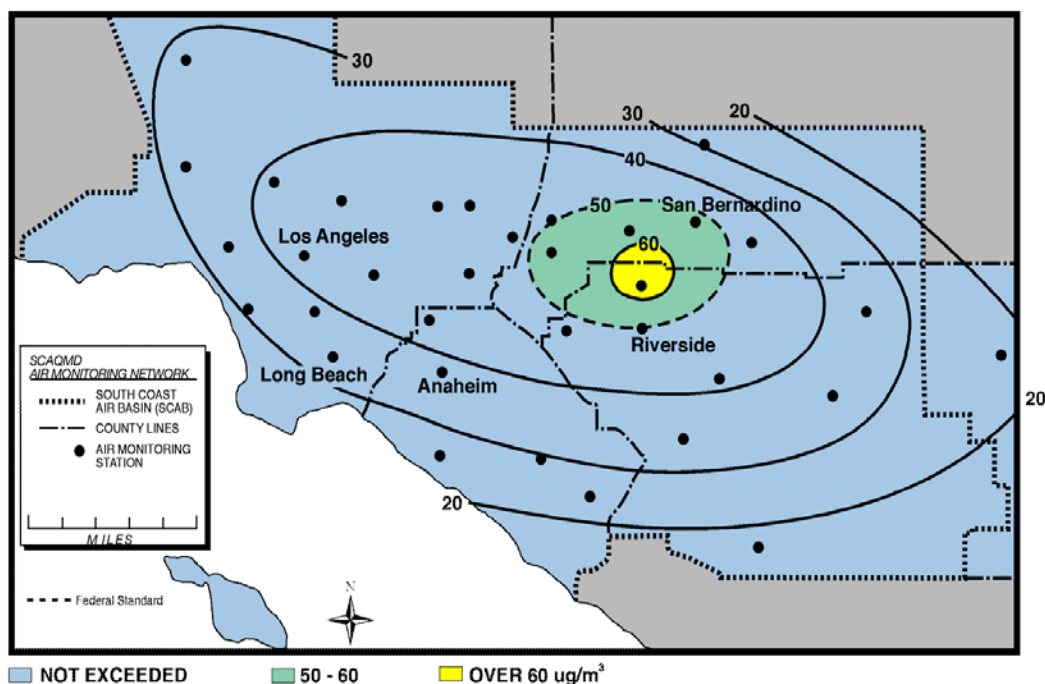


FIGURE 2-12
Suspended Particulate Matter (PM₁₀) - 2001
Annual Arithmetic Mean, $\mu\text{g}/\text{m}^3$

Seasonal and Day-of-Week Variation in PM₁₀

PM₁₀ samples are only collected every sixth day (or third day at sites where an intensive monitoring schedule has been adopted) and exceedances of the federal standard are relatively infrequent in recent years. As a consequence, seasonal and day-of-week variations in exceedances of the federal standard for the last few years cannot be determined accurately. However, if exceedances of the state standard are considered, seasonal and day-of-week patterns do emerge.

Previous analyses of seasonal variations in PM₁₀ show that the monthly average PM₁₀ concentration and the monthly average number of days exceeding the state standard tend to peak in summer and fall in the inland valley area of the Basin where PM₁₀ concentrations are highest. However, in the South Coastal Los Angeles county area, monthly average PM₁₀ concentrations and the average number of days exceeding the state standard are highest in late fall and winter months.

Figure 2-13 shows the average number of days in each month exceeding the state standard at one or more Basin locations over the period 1999-2001. The greatest number of state standard exceedances occurred in the summer and fall months. Due to higher number of exceedances in the inland valleys, the pattern for the Basin is more

similar to those for individual sites in the inland valley areas. Figure 2-14 shows the monthly average PM₁₀ concentrations for the two sites, Metropolitan Riverside county in inland valleys and South Coastal Los Angeles county. In the inland valley areas, PM₁₀ concentrations are higher in the summer and fall months while in the coastal areas higher concentrations are recorded in the late fall and winter months.

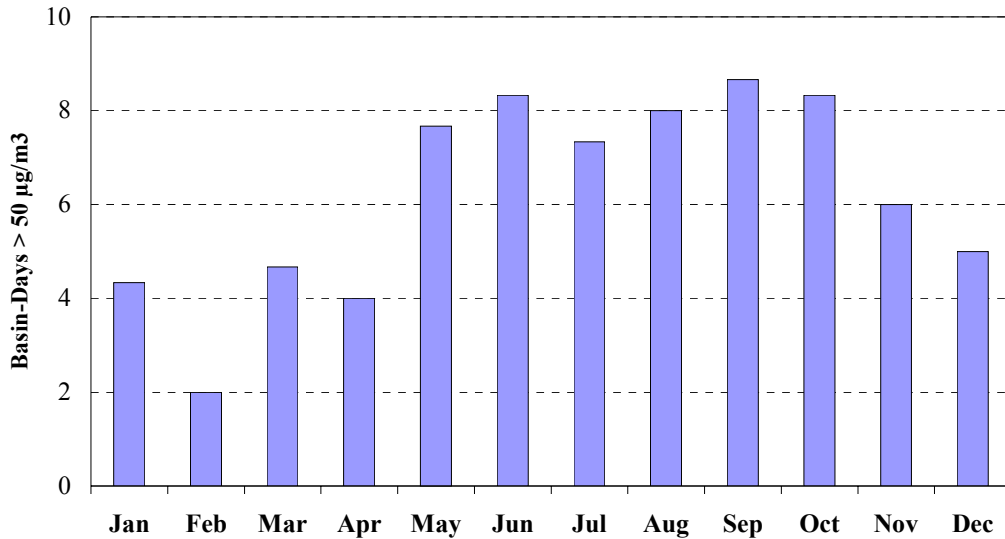


FIGURE 2-13
Basin-Days Exceeding State PM₁₀ Standard by Month, 1999-2001

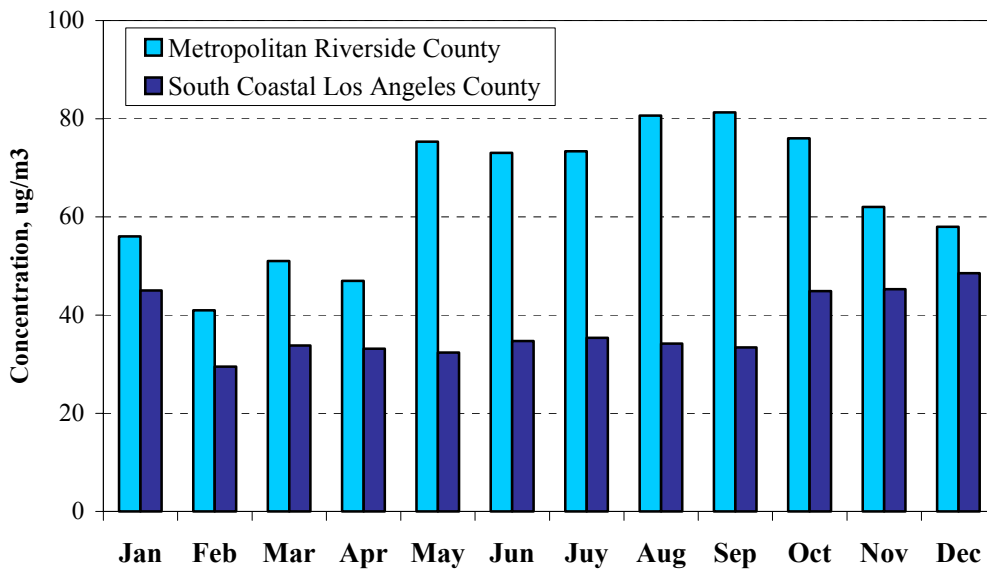


FIGURE 2-14
Monthly Average PM₁₀ Concentration, 1999-2001

Day-of-week variations have also been examined, and it was found that the average weekend concentrations were lower than the weekday average at all sites monitored in the Basin and SSAB locations. Figure 2-15 shows the average PM₁₀ concentrations by day of week at three representative monitoring sites in the Basin for the period 1999-2001, based on the Beta Attenuation Monitor (BAM) and Tapered Element Oscillating Microbalance (TEOM) data.

Diurnal variations proved to be complex and location dependent.

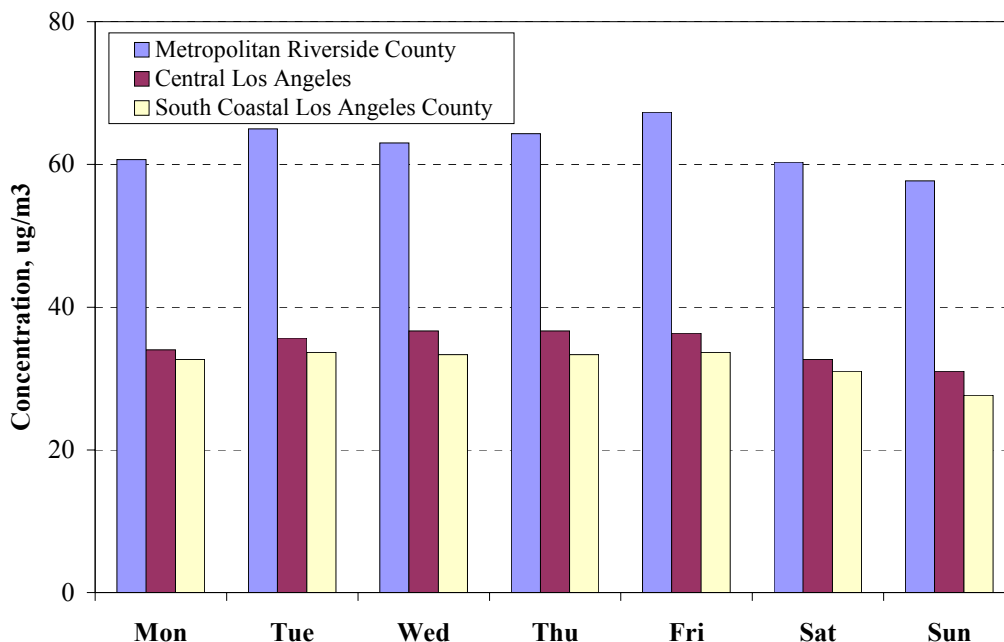


FIGURE 2-15
Day-of-Week Variation, 1999-2001
Average PM₁₀ Concentration by Day of Week

Suspended Particulate Matter (PM_{2.5})

Properties

PM_{2.5}, the fine sized particles less than 2.5 micrometers in diameter, are small enough to penetrate the defenses of the human respiratory system and lodge in the deepest recesses of the lung, causing adverse health impacts. The health effects include increased respiratory symptoms and diseases such as asthma, bronchitis, acute and chronic respiratory problems like shortness of breath and painful breathing (in children, the elderly and sensitive people), and premature deaths (mainly in the elderly due to a weaker immune system). The sources of PM_{2.5} include diesel-powered vehicles such as

buses and trucks, fuel combustion from automobiles, power plants, industrial processes, and wood burning.

In the South Coast Air Basin, much of the PM_{10} fraction is actually finer in size than 2.5 micrometers, a condition which has major implications for both health and atmospheric visibility. Reducing $PM_{2.5}$ concentrations will therefore not only reduce the threat to the health of the Basin's population, but will also improve visual air quality in this region.

The District began monitoring $PM_{2.5}$ regularly in 1999. In 2001, the District measured $PM_{2.5}$ concentrations at 18 locations. Samples are collected for a 24-hour period every 3 days at most locations except for a few sites with high $PM_{2.5}$ levels where samples are taken every day.

Current $PM_{2.5}$ Air Quality

Figure 2-16 shows 2001 the annual average arithmetic mean $PM_{2.5}$ concentrations in different areas of the Basin. Like PM_{10} , $PM_{2.5}$ concentrations were higher in the inland valley areas of San Bernardino county and Metropolitan Riverside county. However, $PM_{2.5}$ concentrations were also high in the metropolitan areas of Los Angeles and Orange counties. The high $PM_{2.5}$ concentrations in these areas are mainly due to the

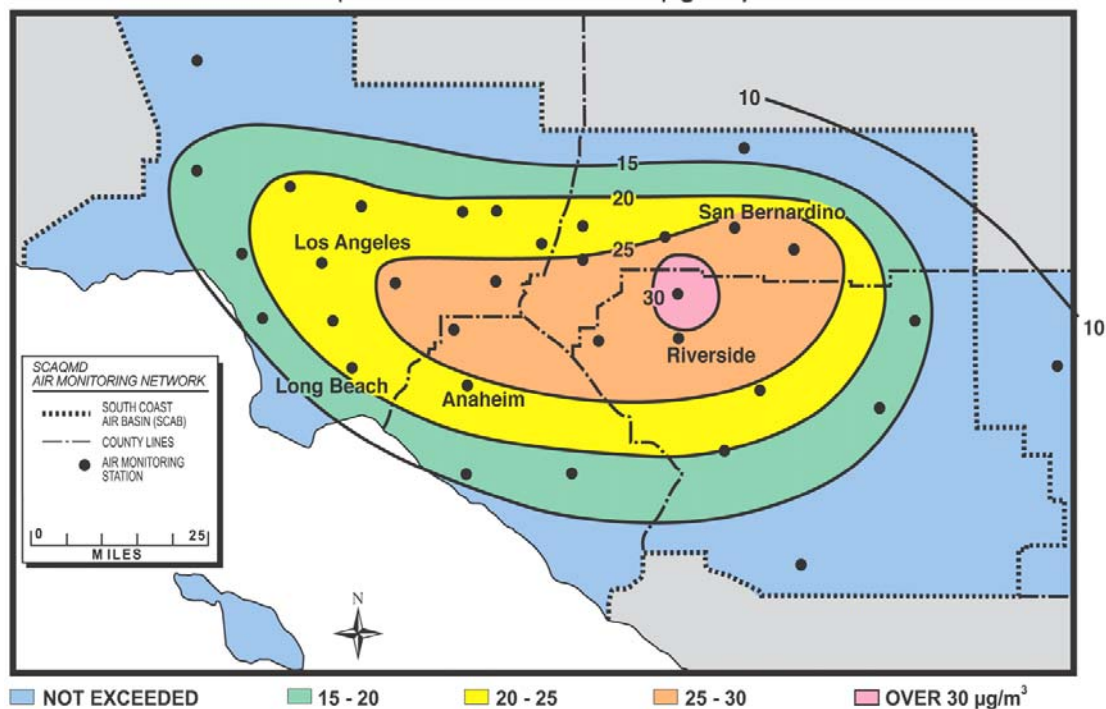


FIGURE 2-16
Suspended Particulate Matter ($PM_{2.5}$) - 2001
Annual Arithmetic Mean, $\mu\text{g}/\text{m}^3$

secondary formation of smaller-sized particulate resulting from mobile and stationary source activities. The maximum annual average recorded ($31.1 \mu\text{g}/\text{m}^3$ in the Metropolitan Riverside county area) was 201% of the federal standard. In 2001, the federal annual $\text{PM}_{2.5}$ standard was exceeded everywhere in the District except for the San Bernardino Mountain area in the Basin and Coachella Valley area in SSAB.

The federal 24-hour $\text{PM}_{2.5}$ standard was exceeded likewise almost everywhere in the Basin in 2001. The standard was exceeded most frequently in the metropolitan areas of Los Angeles and Riverside counties. Maximum 24-hour average concentration ($98.0 \mu\text{g}/\text{m}^3$ in Metropolitan Riverside county) was 150% of the federal 24-hour standard.

Seasonal and Day of Week Variation in $\text{PM}_{2.5}$

Evaluation of the available data for the past two years that $\text{PM}_{2.5}$ has been monitored shows that the $\text{PM}_{2.5}$ concentrations tend to peak during the late fall-winter months. Figure 2-17 shows the average number of days in each month exceeding the federal standard at one or more Basin locations over the years 1999-2001. The greatest number of exceedances occurred in January and October-December.

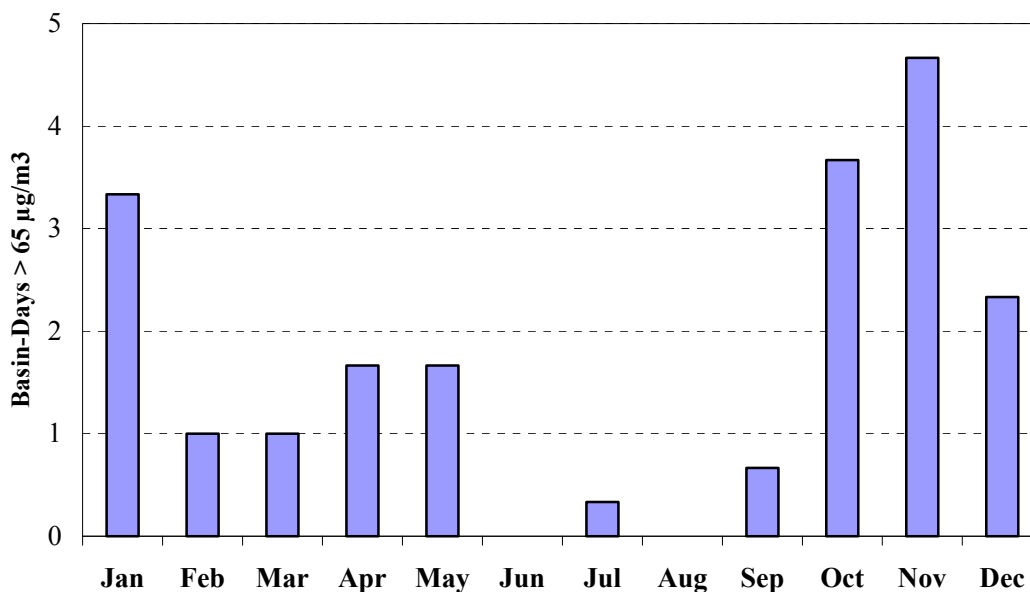


FIGURE 2-17
 $\text{PM}_{2.5}$ Seasonal Variation, 1999-2001
 Average Number of Basin-Days Exceeding Federal Standard by Month

Because PM_{2.5} standards and monitoring requirements are of recent adaption, there is insufficient data accumulated thus far to accurately determine day-of-week trends in PM_{2.5} concentrations in the Basin. Preliminary analysis of available data shows slightly higher frequency of number of days exceeding the federal standard on Sundays and Mondays. No specific day-of-week pattern was found in the in PM_{2.5} concentrations in the Basin. Figure 2-18 the total number of days exceeding the federal standard in the Basin by day of week for the three-year period 1999-2001.

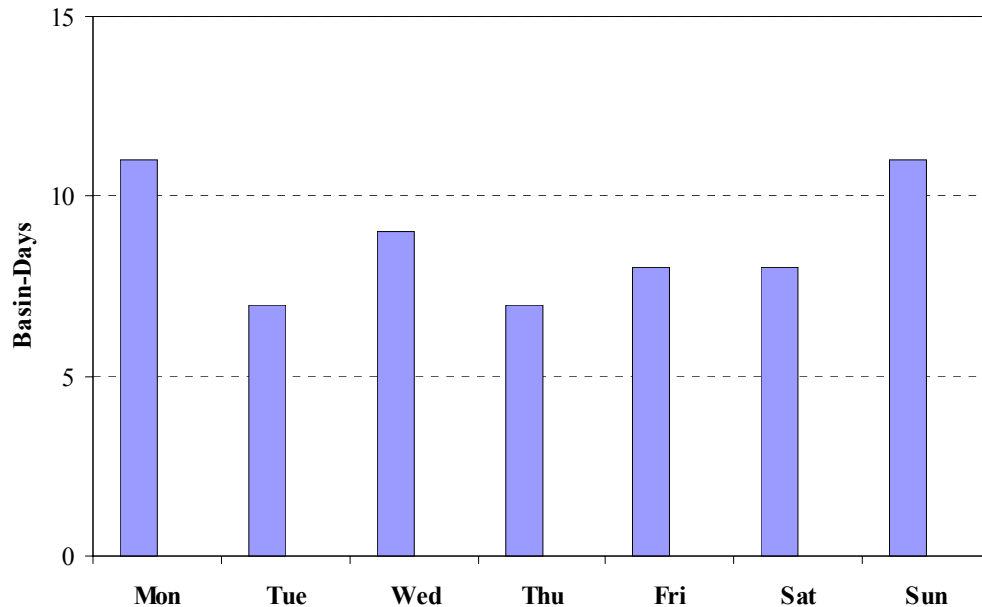


FIGURE 2-18
PM_{2.5} Day-of-Week Variation, 1999-2001
Basin-Days Exceeding the Federal Standard by Day of Week

Nitrogen Dioxide (NO₂)

Properties

Nitrogen dioxide (NO₂) is a reddish-brown gas with a bleach-like odor. Nitric oxide (NO) is a colorless gas, formed from the nitrogen (N₂) and oxygen (O₂) in air under conditions of high temperature and pressure which are generally present during combustion of fuels; NO reacts rapidly with the oxygen in air to give nitrogen dioxide (NO₂). NO₂ is responsible for the brownish tinge of polluted air. The two gases, nitric oxide and nitrogen dioxide, are referred to collectively as oxides of nitrogen (NO_x). In the presence of sunlight, nitrogen dioxide reacts to give nitric oxide and an oxygen atom. The oxygen atom can react further to give ozone, via a complex series of chemical

reactions involving hydrocarbons. Nitrogen dioxide may also react to give nitric acid (HNO₃) which reacts further to give nitrates, which are a component of PM₁₀.

Nitrogen dioxide is a respiratory irritant and reduces resistance to respiratory infection. Children and people with respiratory disease are most susceptible to its effects.

Current Nitrogen Dioxide Air Quality

In 2001, the District monitored nitrogen dioxide concentrations at 23 locations. Federal and state standards for nitrogen dioxide were not exceeded at any location. The federal standard has not been exceeded in the Basin since 1991.

Table 1 below shows the 2001 maximum annual average nitrogen dioxide concentrations by Basin and county. The maximum annual average nitrogen dioxide concentration (0.0419 ppm recorded in the East San Fernando Valley area of Los Angeles county) was 78% of the federal standard. Concentrations in the downwind SSAB areas were much lower. The maximum 1-hour average concentration in the Basin (0.25 ppm in East San Fernando Valley) was 96% of the state standard.

The annual averages, number of days exceeding the state standard, and maximum 1-hour average concentrations for each individual area of the District for the years 1976-2001 are given in Tables A-14 to A-16 in Attachment.

TABLE 1
2001 Maximum Annual Average Nitrogen Dioxide Concentrations*

Basin/County	Maximum Annual Avg. ppm	Percent Federal Standard	Area
South Coast Air Basin			
Los Angeles	0.0419	78%	East San Fernando Valley
Orange	0.0293	55%	Central Orange County
Riverside	0.0247	46%	Metropolitan Riverside County
San Bernardino	0.0384	72%	Northwest San Bernardino Valley
Salton Sea Air Basin			
Riverside	0.0175	33%	Coachella Valley

* Federal standard = 0.0535 ppm

Though the state and federal standards were not exceeded in 2001, nitrogen dioxide is still a concern since it is a precursor to both ozone and particulate matter. Further control of oxides of nitrogen will be required to attain the ozone and particulate standards.

Sulfur Dioxide (SO₂)

Properties

Sulfur dioxide (SO₂) is a colorless gas with a sharp odor. It reacts in the air to form sulfuric acid (H₂SO₄), which contributes to acid precipitation, and sulfates, which are a component of PM₁₀ and PM_{2.5}. Most of the SO₂ emitted into the atmosphere is produced by the burning of sulfur-containing fuels.

At sufficiently high concentrations, sulfur dioxide affects breathing and the lungs' defenses, and can aggravate respiratory and cardiovascular diseases. Asthmatics and people with chronic lung disease or cardiovascular disease are most sensitive to its effects. Sulfur dioxide also causes plant damage, damage to materials, and acidification of lakes and streams.

Current Sulfur Dioxide Air Quality

In 2001, sulfur dioxide was measured at seven Basin locations. No violations of federal or state standards occurred. The federal standards were last exceeded in the 1960's and the state standard was last exceeded in 1990.

The maximum 24-hour average SO₂ concentrations recorded in the District in 2001 are shown in Table 2. The highest 24-hour average SO₂ concentration (0.012 ppm in South and Southwest Coastal Los Angeles county areas) was 8% of the federal 24-hour standard. The highest 1-hour average (0.05 ppm in South Coastal Los Angeles county) was 19% of the state standard. The maximum annual average concentration (0.0041 ppm in the Southwest Coastal Los Angeles county area) was 13% of the federal standard.

Detailed statistics including annual average and maximum 1-hour average SO₂ concentrations for each location monitored for the years 1976-2001 are given in in Attachments A-17 and A-18.

While sulfur dioxide concentrations in the Basin no longer exceed standards, SO₂ is a precursor of PM₁₀ and sulfate.

TABLE 2
2001 Maximum 24-Hour Average Sulfur Dioxide Concentrations*

Basin/County	Maximum 24-hr Avg. ppm	Percent Federal Standard	Area
South Coast Air Basin			
Los Angeles	0.012	8%	Southwest Coastal LA County
Orange	0.007	5%	North Coastal Orange County
Riverside	0.011	8%	Metropolitan Riverside County
San Bernardino	0.010	7%	Central San Bernardino Valley
Salton Sea Air Basin			
Riverside	N.D.		

N.D. = No Data. Historical measurements indicate concentrations are below standard.

* Federal standard = 0.14 ppm

Sulfate (SO₄²⁻)

Properties

Sulfates are chemical compounds which contain the sulfate ion (SO₄²⁻), and are part of the mixture of solid materials which make up PM₁₀ and TSP. Most of the sulfates in the atmosphere are produced by oxidation of sulfur dioxide. Oxidation of sulfur dioxide yields sulfur trioxide (SO₃) which reacts with water to give sulfuric acid (H₂SO₄), which contributes to acid precipitation. The reaction of sulfuric acid with basic substances such as ammonia yields sulfates, a component of PM₁₀.

Current Sulfate Air Quality

In 2001 sulfate concentrations were measured at 13 Basin locations. Table 3 shows the 2001 maximum 24-hour average concentrations in the District by Basin and county. The maximum sulfate concentration (20.6 µg/m³) recorded in the District was 82% of the state standard.

The percent of days exceeding the standard and the maximum 24-hour average concentration at each monitoring location for the years 1976-2001 are given in Tables A-19 to A-20 in Attachment.

TABLE 3
2001 Maximum 24-Hour Average Sulfate Concentrations

Basin/County	Maximum 24-hr. Avg. $\mu\text{g}/\text{m}^3$	Percent State Standard	Area
South Coast Air Basin			
Los Angeles	20.6	82%	Southwest Coastal LA County
Orange	N.D.		
Riverside	10.7	43%	Metropolitan Riverside County
San Bernardino	11.5	46%	Central San Bernardino Valley
Salton Sea Air Basin			
Riverside	N.D.		

N.D. = No Data. Historical measurements indicated concentrations were below standard.

* State standard = 25 $\mu\text{g}/\text{m}^3$

Lead (Pb)

Properties

Lead in the atmosphere is present as a mixture of a number of lead compounds. Leaded gasoline and lead smelters have been the main sources of lead emitted into the air. Due to the phasing out of leaded gasoline, there was a dramatic reduction in atmospheric lead in the Basin over the past two decades. However, lead concentrations in excess of the standards have been recorded since 1990 in very localized areas near stationary sources of lead.

Current Lead Air Quality

In 2001 lead concentrations were measured at nine Basin air monitoring stations, none of which exceeded the state or federal standards. Table 4 shows the maximum quarterly average lead concentrations in the District by Basin and county in 2001. The maximum quarterly average lead concentration ($0.12 \mu\text{g}/\text{m}^3$) was 8% of the federal standard. The maximum monthly average lead concentration ($0.23 \mu\text{g}/\text{m}^3$) was 15% of the state standard.

TABLE 4
2001 Maximum Quarterly Average Lead Concentrations

Basin/County	Maximum Qtr. Avg.* $\mu\text{g}/\text{m}^3$	Percent Federal Standard	Area
South Coast Air Basin			
Los Angeles	0.12	8%	South Central LA County
Orange	N.D.		
Riverside	0.03	2%	Metropolitan Riverside County
San Bernardino	0.04	3%	Multiple Sites
Salton Sea Air Basin			
Riverside	N.D.		

N.D. = No Data. Historical measurements indicated concentrations were below standard.

* Higher concentrations ($0.49 \mu\text{g}/\text{m}^3$) were measured in localized areas near sources.

In addition to lead measurements at District air monitoring stations, special monitoring was done in the immediate vicinity of several stationary sources of lead. Data from the special monitoring sites showed that higher concentrations were reached in very localized areas near sources, with a maximum quarterly average ($0.49 \mu\text{g}/\text{m}^3$) 32% of the federal standard, and a maximum monthly average ($0.57 \mu\text{g}/\text{m}^3$) 38% of the state standard.

Maximum quarterly average and monthly average lead concentrations at each of the regular monitoring sites for the years 1976-2001 are given in the Attachment, Tables A-21 and A-22 in Attachment.

CHAPTER 3

AIR QUALITY IN THE RIVERSIDE COUNTY SSAB

AIR QUALITY IN THE RIVERSIDE COUNTY SSAB

In 2001, the District monitored air quality at two locations in the Riverside county portion of the Salton Sea Desert Air Basin (SSAB), both in the Coachella Valley. One monitoring station was located immediately downwind of the densely populated Basin, and the other was located further downwind in the Coachella Valley. The maximum concentrations recorded at these locations in 2001 are shown in Figure 3-1.

In 2001, pollutant concentrations in the Riverside county SSAB exceeded standards for ozone and PM10. The maximum 1-hour average ozone concentration (0.137ppm) was 137% and 110% of the state and federal standards, respectively. The maximum 8-hour average ozone concentration (0.114 ppm) was 134% of the 8-hour federal ozone standard. The maximum annual average PM10 concentration ($50.2 \mu\text{g}/\text{m}^3$) was 99% of the federal annual PM10 standard. (The annual average PM10 does not include the data for the samples collected on high-wind days in accordance with EPA's Natural Event Policy.) The maximum annual average PM2.5 concentration ($12.2 \mu\text{g}/\text{m}^3$) was 79% of the standard.

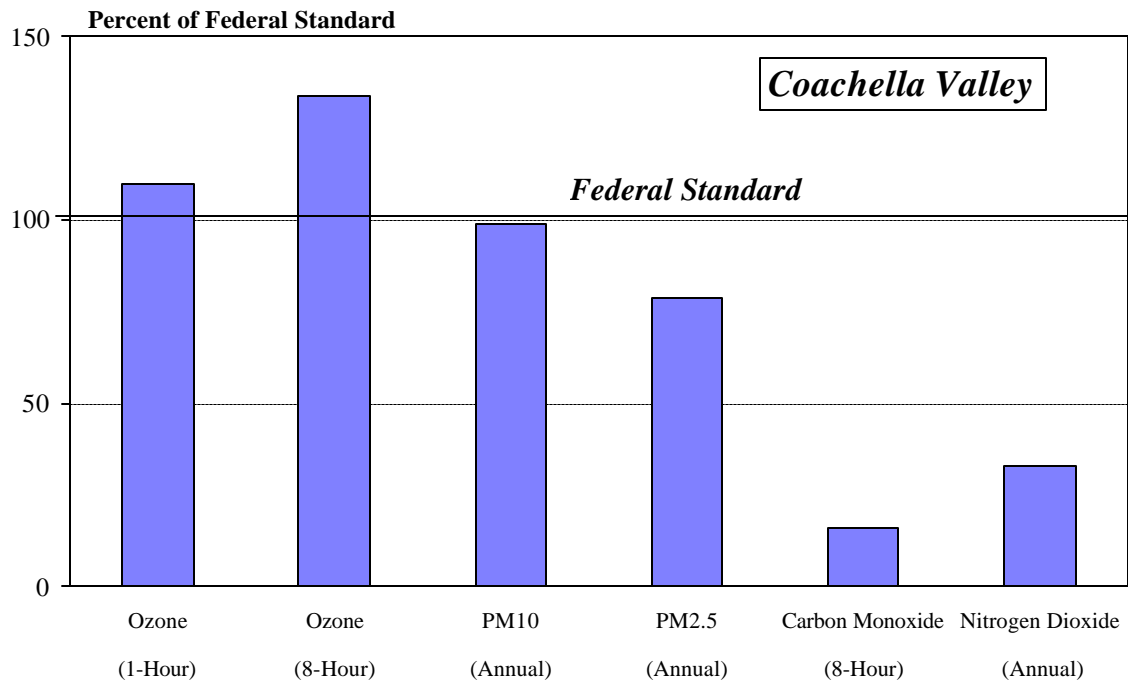


FIGURE 3-1
2001 Maximum Pollutant Concentrations as Percent of Standards
Riverside County SSAB

Federal and state standards for carbon monoxide and nitrogen dioxide were not exceeded. The highest 8-hour average carbon monoxide concentration (1.75 ppm) was 16% of the federal standard. The maximum annual average nitrogen dioxide concentration recorded (0.0175 ppm) was 33% of the federal NO₂ standard. No measurements of sulfur dioxide, sulfate or lead were made in the Riverside county SSAB area of the District in 2001. Historical measurements in this area showed concentrations of these pollutants to be well below the state and federal standards and monitoring was discontinued. Detailed information on historical air quality and trends in air quality in this area was presented in a previous report.

Ozone (O₃)

Ozone in the atmosphere of the Riverside county portion of SSAB is both directly transported from the Basin and formed principally from precursors emitted upwind. These precursors are emitted in greatest quantity in the coastal and central Los Angeles county areas of the Basin. The Basin's prevailing sea breeze causes polluted air to be transported inland. As the air is being transported inland, ozone is formed, with peak concentrations occurring in the inland valleys of the Basin in an area extending from eastern San Fernando Valley through the San Gabriel Valley into the Riverside-San Bernardino area and the adjacent mountains. As the air is transported still further inland into the desert areas, ozone concentrations decrease.

The 1-hour federal ozone standard level was exceeded on a maximum of six days in Coachella Valley in 2001. The more stringent 8-hour federal standard was exceeded on 42 days. Ozone concentrations and the number of days exceeding the federal ozone standard are greatest in summer. There are typically no exceedances during the winter months.

The 1-hour state ozone standard was exceeded on a maximum of 53 days in Coachella Valley in 2001. The health advisory level has not been exceeded in the Coachella Valley area since 1999. No stage 1 episode level has been recorded in the Riverside county SSAB areas since 1989.

Number of days exceeding the 1-hour federal ozone standard and episode levels and the maximum 1-hour ozone concentrations for the years 1976-2001 are given in the Attachment, in Tables A-4 through A-6.

Particulate Matter (PM₁₀)

Although exceedances of the ozone standard in the Coachella Valley area are due to the transport of ozone from the densely populated areas of the Basin upwind, the same cannot be said for PM₁₀ exceedances. PM₁₀ exceedances in the Coachella Valley are primarily due to locally generated sources of fugitive dust (e.g. construction activities, re-entrained

dust from paved road travel, and natural wind-blown sources) and not as a result of secondary PM10 generated from precursor gaseous emissions. In addition, the Riverside county SSAB is subject to frequent high winds which generate wind-blown sand and dust that can cause high levels of PM10. PM10 is the only pollutant which has sometimes reached higher concentrations in SSAB than in the densely populated Basin.

In 2001, the federal 24-hour PM10 standard was exceeded in Coachella Valley on a maximum of five days (4% of sampling days). All samples which exceeded the standard were collected on high-wind days which resulted in windblown dust. The data for these samples are excluded from the data base in accordance with the EPA's Natural Event Policy. The federal annual PM10 standard level was not exceeded in the Riverside county part of SSAB in 2001. The maximum annual average PM10 concentration ($50.2 \mu\text{g}/\text{m}^3$) was 99% of the standard.

The maximum annual average PM10 concentrations in the western portion of the Coachella Valley area, as well as the San Gorgonio Pass area at the eastern edge of the Basin, remained well below the federal PM10 standards in 2001.

In 2001, the state 24-hour PM10 standard was exceeded on a maximum of 50 days (45% of sampling days) in Coachella Valley. The state annual standard was also exceeded. The maximum annual average ($44.3 \mu\text{g}/\text{m}^3$, annual geometric mean) was 147% of the state standard.

Analyses of the seasonal distribution of exceedances of the PM10 standards showed a pattern similar to the inland valleys with a peak in summer and falling to a minimum in winter.

Variation in average concentration by day-of-week in Coachella Valley also shows the same pattern as other areas in the Basin, with concentrations lower on weekends than on week days.

Annual average, percent number of days exceeding standards and maximum 24-hour average concentrations for the years 1985-2001 for the Riverside county SSAB and other District air monitoring stations are presented in the Attachment, in Tables A-10 to A-13.

Particulate Matter (PM2.5)

PM2.5 has been measured in Coachella Valley since 1999 when the District began PM2.5 monitoring. In 2001, federal PM2.5 standards were not exceeded at either of the two Riverside county SSAB air monitoring sites. The maximum 24-hour average and annual average concentrations recorded in 2001 ($44.7 \mu\text{g}/\text{m}^3$ and $12.2 \mu\text{g}/\text{m}^3$) were, respectively, 68% and 79% of the federal 24-hour and annual standards.

Carbon Monoxide (CO)

Carbon monoxide was measured at one of the Riverside county SSAB air monitoring stations in 2001. Neither the federal nor state standards were exceeded. The maximum 8-hour average CO recorded in 2001 (1.75 ppm) was 16% of the federal and 19% of the state standards. Historical carbon monoxide air quality and trends in the Riverside county SSAB area shows that the area has not exceeded the federal standard over the last two decades.

Summary statistics for carbon monoxide in the Riverside county SSAB as well as other District areas are given in the Attachment, in Tables A-7 to A-9.

Nitrogen Dioxide (NO₂)

Nitrogen dioxide was measured at one of the stations in the Riverside county SSAB in 2001. The maximum annual average nitrogen dioxide concentration (0.0175 ppm) was 33% of the federal standard and the maximum 1-hour average (0.08 ppm) was 31% of the state 1-hour standard.

Table 1 (Chapter 2) and Tables A-15 to A-17 in the Attachment contain nitrogen dioxide summary statistics for the Riverside county SSAB and other District monitoring stations for the year 2001 and earlier years.

Sulfur Dioxide (SO₂)

Sulfur dioxide concentrations were not measured in the Riverside county SSAB in 2001. Measurements made in past years have shown concentrations to be well below the standard.

Tables A-17 and A-18 in the Attachment contain annual average and maximum 1-hour averages for available years for the period 1976-2001 at Riverside county SSAB and other District monitoring stations.

Sulfate (SO₄⁻)

No measurements of sulfate concentrations were made in 2001 at the two monitoring stations in the Riverside county SSAB. Historical monitoring has shown concentrations to be less than the state standard.

The percent of days exceeding the standard, and the maximum 24-hour average and annual average sulfate concentrations at each monitoring location for past years are presented in the Attachment, in Tables A-20 to A-22.

Lead (Pb)

Lead concentrations were not measured at the two Riverside county SSAB stations in 2001. Measurements made in past years have shown concentrations to be less than the state and federal standards.

Maximum quarterly average and monthly average concentrations for past years are given in Tables A-23 and A-24 in the Attachment.

SUMMARY

SUMMARY

This report contains a summary of the year 2001 air quality in the South Coast Air Basin and the portion of Salton Sea Air Basin monitored by the South Coast Air Quality Management District. For those pollutants for which the Basin is in nonattainment of the federal standards, an updated air quality trends through the year 2001 are presented.¹

In 2001 the South Coast Air Quality Management District monitored concentrations of air pollutants at 32 locations in Southern California's Los Angeles, Orange, Riverside and San Bernardino counties. Pollutant concentrations exceeded the federal and state standards for ozone and particulate matter (PM10, PM2.5). Standards for carbon monoxide, nitrogen dioxide, sulfur dioxide, sulfate and lead were not exceeded.

In the year 2001, the U.S. location with the highest number of days exceeding the federal ozone standard was located in the South Coast Air Basin (Orange county and the non-desert portions of Los Angeles, Riverside and San Bernardino counties). The Basin also continued to rank among the areas of the U.S. with high carbon monoxide and PM10 concentrations in 2001.

South Coast Air Basin (SCAB)

In 2001, there were a total of 37 days on which the federal standards for 1-hour ozone and 24-hour PM10 were exceeded at one or more SCAB (Basin) locations. The recently adopted federal 24-hour PM2.5 standard was exceeded on 23 days in the Basin.

The number of days exceeding the federal ozone standard varied widely by area, from zero to 26 exceedances, depending on location. Exceedances were fewest at the coast, increasing to a maximum in the Basin's Central San Bernardino Mountains and inland valleys, and then decreasing further downwind in the Basin's far inland areas. The Central San Bernardino Mountains area exceeded the federal ozone standard most frequently (26 days). The more stringent state standard was exceeded on 88 days in the same area. The highest 1-hour average and 8-hour average ozone concentration recorded in 2001 (0.190 ppm and 0.144 ppm) were 152% and 169% of the federal 1-hour and 8-hour standards, respectively.

In 2001, carbon monoxide concentrations did not exceed the standards anywhere in the Basin. The highest carbon monoxide concentrations were recorded in coastal and central Los Angeles county areas. The maximum 8-hour average concentration of 7.71 ppm, recorded in South Central Los Angeles County, was 81% of the federal standard.

¹ The current air quality analysis presented in this report is based on the data through the year 2001. Complete particulate data for the year 2002 is not available at this time.

Exceedances of the federal annual PM10 standard were confined to Riverside and San Bernardino counties, primarily in and around the Metropolitan Riverside county area. The more stringent state annual PM10 standard was exceeded in a much larger area, covering most of the Basin. The federal 24-hour PM10 standard was also exceeded at a few locations in the inland valley areas in 2001. The state 24-hour standard, however, was exceeded at all locations monitored, with the Metropolitan Riverside county area exceeding most frequently (67% of sampling days). The maximum 24-hour average and annual PM10 concentrations ($219 \mu\text{g}/\text{m}^3$ and $63.1 \mu\text{g}/\text{m}^3$) were 146% and 125% of the federal 24-hour and annual standards, respectively.

PM2.5 concentrations were monitored in the District in 2001 in accordance with the adopted federal PM2.5 standards. Maximum 24-hour average and annual average PM2.5 concentrations ($98.0 \mu\text{g}/\text{m}^3$ and $31.1 \mu\text{g}/\text{m}^3$) were 150% and 201% of the federal 24-hour and annual standards, respectively, both recorded in the Metropolitan Riverside county area.

Riverside County Salton Sea Air Basin (SSAB)

Pollutant concentrations in the Riverside county portion of SSAB were monitored at two locations in the Coachella Valley in 2001, and exceeded the federal and state standards for ozone. No other standards were exceeded.

The highest 1-hour and 8-hour ozone concentrations recorded in the Coachella Valley in 2001 (0.137 ppm and 0.114 ppm) were 110% and 134% of the federal 1-hour and 8-hour standards, respectively. The federal 1-hour ozone standard exceeded on a maximum of six days in SSAB in 2001. The more stringent state standard was exceeded on 42 days.

Both the state and federal 24-hour PM10 standards and the state and federal annual PM10 standards were exceeded in the Coachella Valley. However, the deletion of high-wind day samples from consideration results in there being no exceedances of the federal standards in 2001. PM2.5 concentrations were below the federal 24-hour and annual PM2.5 standards.

Seasonal, Day-of-Week and Diurnal Variations

Concentrations of pollutants have been found to vary by season, day of week, and time of day, and these variations were examined for 1999-2001 for ozone, carbon monoxide and PM10. Ozone standard exceedances generally peak in summer, while carbon monoxide exceedances peak in late fall and winter, and federal 24-hour PM10 exceedances peak in fall and winter. Ozone tended to be higher on weekends than on weekdays, while the opposite was true for carbon monoxide and PM10. The time of the day which averaged highest in ozone concentration was early afternoon in the peak

ozone area, while carbon monoxide averaged highest at the time of morning rush-hour traffic.

ATTACHMENT

TABLE A-1

AMBIENT AIR QUALITY STANDARDS

AIR POLLUTANT	CALIFORNIA	FEDERAL			
	CONCENTRATION	DISTRICT METHOD	PRIMARY (>)	SECONDARY (>)	METHOD ^{a)}
Ozone ^{b)}	0.09 ppm, 1-hour average >	U.V. Photometry	0.12 ppm, 1-hour average 0.08 ppm, 8-hour average ^{b)}	Same as Primary Standrd	Chemiluminescence
Carbon Monoxide	9.0 ppm, 8-hour average > ^{c)} 20 ppm, 1-hour average >	Gas Correlation	9 ppm, 8-hour average ^{d)} 35 ppm, 1-hour average	None	Non-dispersive Infra-Red Spectrophotometry
Nitrogen Dioxide	0.25 ppm, 1-hour average > ^{e)}	Gas Phase Chemiluminescence	0.053 ppm, annual average ^{f)}	Same as Primary Standrd	Gas Phase Chemiluminescence
Sulfur Dioxide	0.04 ppm, 24-hour average > ^{g)} 0.25 ppm, 1-hour average > ^{h)}	Ultraviolet PulseFluorescence	0.03 ppm, annual average 0.14 ppm, 24-hour average	0.50 ppm, 3-hour average	Para-rosaniline
Suspended Particulate Matter (PM10)**	30 µg/m ³ , annual geometric mean > 50 µg/m ³ , 24-hour average > ^{i),**} 20 µg/m ³ , annual arithmetic mean > **	Size Segregation Inlet High Volume Sampling	50 µg/m ³ , annual arithmetic mean 150 µg/m ³ , 24-hour average ^{j)}	Same as Primary Standrd	Inertial Separation and Gravimetric Analysis
Suspended Particulate Matter (PM2.5) ^{k),**}	12 µg/m ³ , annual arithmetic mean **	Inertial Separation and Gravimetric Analysis	15 µg/m ³ , annual arithmetic mean ^{k)} 65 µg/m ³ , 24-hour average ^{k)}	Same as Primary Standrd	Inertial Separation and Gravimetric Analysis
Lead	1.5 µg/m ³ , 30-day average >=	High Vol. Sampling Atomic Absorption	1.5 µg/m ³ , calendar quarter	Same as Primary Standrd	High Vol. Sampling Atomic Absorption
Sulfates	25 µg/m ³ , 24-hour average >=	High Vol. Sampling Ion Chouromatography	NO FEDERAL STANDARDS		
Hydrogen Sulfide	0.03 ppm, 1-hour average >=	Cadmium Hydroxide Stractan			
Vinyl Chloride	0.010 ppm, 24-hour average >=	Gas Chouromatography			
Visibility Reducing Particles	In sufficient amount to give an extinction coefficient > 0.23 inverse kilometers (visual range less than 10 miles), with relative humidity <70%, 8-hour average (10am-6pm, PST) ^{l)} .	Nephelometry and AISI Tape Sampler (COH)			

a) Reference method as described by the federal government. An equivalent method of measurement may be used as approved by the federal government.

b) Effective September 16, 1997, new federal 8-hour average standard was established.

c) Effective December 15, 1982. The previous standards were 10 ppm, 12-hour average and 40 ppm, 1-hour average.

d) Effective September 13, 1985, standard changed from >10 µg/m³ (>=9.3 ppm) to > 9 ppm (>=9.5 ppm).

e) Effective March 9, 1987, standard changed from >=0.25 ppm to > 0.25 ppm.

f) Effective July 1, 1985, standard changed from > 100 µg/m³ (>0.0532 ppm) to > 0.053 ppm (>= 0.0535 ppm).

g) Effective July 29, 1992. The previous standard was >= 0.05 ppm, 24-hour average with ozone >=0.1 ppm, 1-hour average or TSP >=100 µg/m³, 24-hour average.

h) Effective October 5, 1984. The previous standard was 0.5 ppm, 1-hour average.

i) Effective August 19, 1983**. The previous standards were annual geometric mean TSP > 60 µg/m³, and 24 hour average TSP > 100 µg/m³.

j) Effective July 1, 1987. The previous standards were annual geometric mean TSP > 75 µg/m³, and 24 hour average TSP > 260 µg/m³.

k) Effective September 16, 1997, new federal standards were established. There were no previous standards for PM2.5.

** The new PM_{2.5} annual average state standard of 12 µg/m³ and revised PM₁₀ annual average state standard of 20 µg/m³ (to replace AGM 30 µg/m³) recommended by the California Air Resources Board was approved by the state Office of Administrative Law effective July 5, 2003.

1) Effective October 18, 1989. The previous standard was “In sufficient amount to reduce the prevailing visibility to less than 10 miles at relative humidity less than 70%, 1 observation”, and was based on human observation rather than instrumental measurement.

Revised
July 2003

TABLE A-2
Episode Criteria

AIR POLLUTANT	SCAQMD AND CALIFORNIA				FEDERAL		
	HEALTH ADVISORY (≥)	STAGE I (≥)	STAGE II (≥)	STAGE III (≥)	STAGE I (≥) (ALERT)	STAGE II (≥) (WARNING)	STAGE III (≥) (EMERGENCY)
Ozone	0.15 ppm, 1-hr. avg.	0.20 ppm, 1-hr. avg.	0.35 ppm, 1-hr. avg.	0.50 ppm, 1-hr. avg.	0.2 ppm, 1-hr. avg.	0.4 ppm, 1-hr. avg.	0.5 ppm, 1-hr. avg.
Carbon Monoxide		40 ppm, 1-hr. avg. 20 ppm, 12-hr. avg.	75 ppm, 1-hr. avg. 35 ppm, 12-hr. avg.	100 ppm, 1-hr. avg. 50 ppm, 12-hr. avg.	15 ppm, 8-hr. avg.	30 ppm, 8-hr. avg.	40 ppm, 8-hr. avg.
Nitrogen Dioxide					0.6 ppm, 1-hr. avg. 0.15 ppm, 24-hr. avg.	1.2 ppm, 1-hr. avg. 0.30 ppm, 24-hr. avg.	1.6 ppm, 1-hr. avg. 0.40 ppm, 24-hr. avg.
Sulfur Dioxide		0.50 ppm, 1-hr. avg. 0.20 ppm, 24-hr. avg.	1.00 ppm, 1-hr. avg. 0.70 ppm, 24-hr. avg.	2.00 ppm, 1-hr. avg. 0.90 ppm, 24-hr. avg.	0.3 ppm, 24-hr. avg.	0.6 ppm, 24-hr. avg.	0.8 ppm, 24-hr. avg.
Suspended Particulate (PM ₁₀)					350 µg/m ³ , 24-hr. avg.	420 µg/m ³ , 24-hr. avg.	500 µg/m ³ , 24-hr. avg.
Suspended Particulate (PM _{2.5})							
Sulfates*	25 µg/m ³ , 24-hr. avg. combined with ozone > 0.20 ppm, 1-hr. avg.						
Actions to be Taken**	Health Advisory to a) Persons with respiratory and coronary disease, b) School officials in order to curtail students' participation in strenuous activities.	First steps in abatement plans. Health Advisory to a) Persons with respiratory and coronary disease, b) School officials in order to curtail students' participation in strenuous activities.	Intermediate Steps. Abatement actions taken to reduce concentration of pollutant at issue.	Mandatory abatement measures. Extensive actions taken to prevent exposure at indicated levels. State can take action if local efforts failed.	Open burning prohibited. Reduction in vehicle operation requested. Industrial curtailment.	Incinerator use prohibited. Reduction in vehicle operation required. Further industrial curtailment.	Vehicle use prohibited. Industry shut down or curtailment. Public activities ceased.

* Episodes based upon these criteria are not classified according to stages.

** For ozone, actions a) and b) are taken at Health Advisory level. For all other pollutants, these actions are taken at Stage I Episode level.

TABLE A-3**Air Monitoring Stations and Source/Receptor Areas**

<u>AREA #</u>	<u>SOURCE/RECEPTOR AREA*</u>	<u>AIR MON STN #</u>
<u>LOS ANGELES COUNTY</u>		
1	Central LA	087
2	Northwest Coastal LA County	091
3	Southwest Coastal LA County	094
4	South Coastal LA County	072
6	West San Fernando Valley	074
7	East San Fernando Valley	069
8	West San Gabriel Valley	088
9	East San Gabriel Valley 1	060
9	East San Gabriel Valley 2	591
10	Pomona/Walnut Valley	075
11	South San Gabriel Valley	085
12	South Central LA County 1	084
12	South Central LA County 2	801
13	Santa Clarita Valley	090
<u>ORANGE COUNTY</u>		
16	North Orange County	3177
17	Central Orange County	3176
18	North Coastal Orange County	3195
19	Saddleback Valley 1	3186
19	Saddleback Valley 2	3812
<u>RIVERSIDE COUNTY</u>		
22	Norco/Corona	4155
23	Metropolitan Riverside County 1	4144
23	Metropolitan Riverside County 2	4146
24	Perris Valley	4149
25	Lake Elsinore Area	4158
29	Banning Airport	4164
30	Coachella Valley 1**	4137
30	Coachella Valley 2**	4157
<u>SAN BERNARDINO COUNTY</u>		
32	Northwest San Bernardino Valley	5175
33	Southwest San Bernardino Valley	5817
34	Central San Bernardino Valley 1	5197
34	Central San Bernardino Valley 2	5203
35	East San Bernardino Valley	5204
37	Central San Bernardino Mountains	5181
38	East San Bernardino Mountains	5818

* Source/Receptor areas and numbers are shown in detail on the map "South Coast Air Quality Management District and Air Monitoring Areas" which is available from SCAQMD Public Information.

**Salton Sea Air Basin.

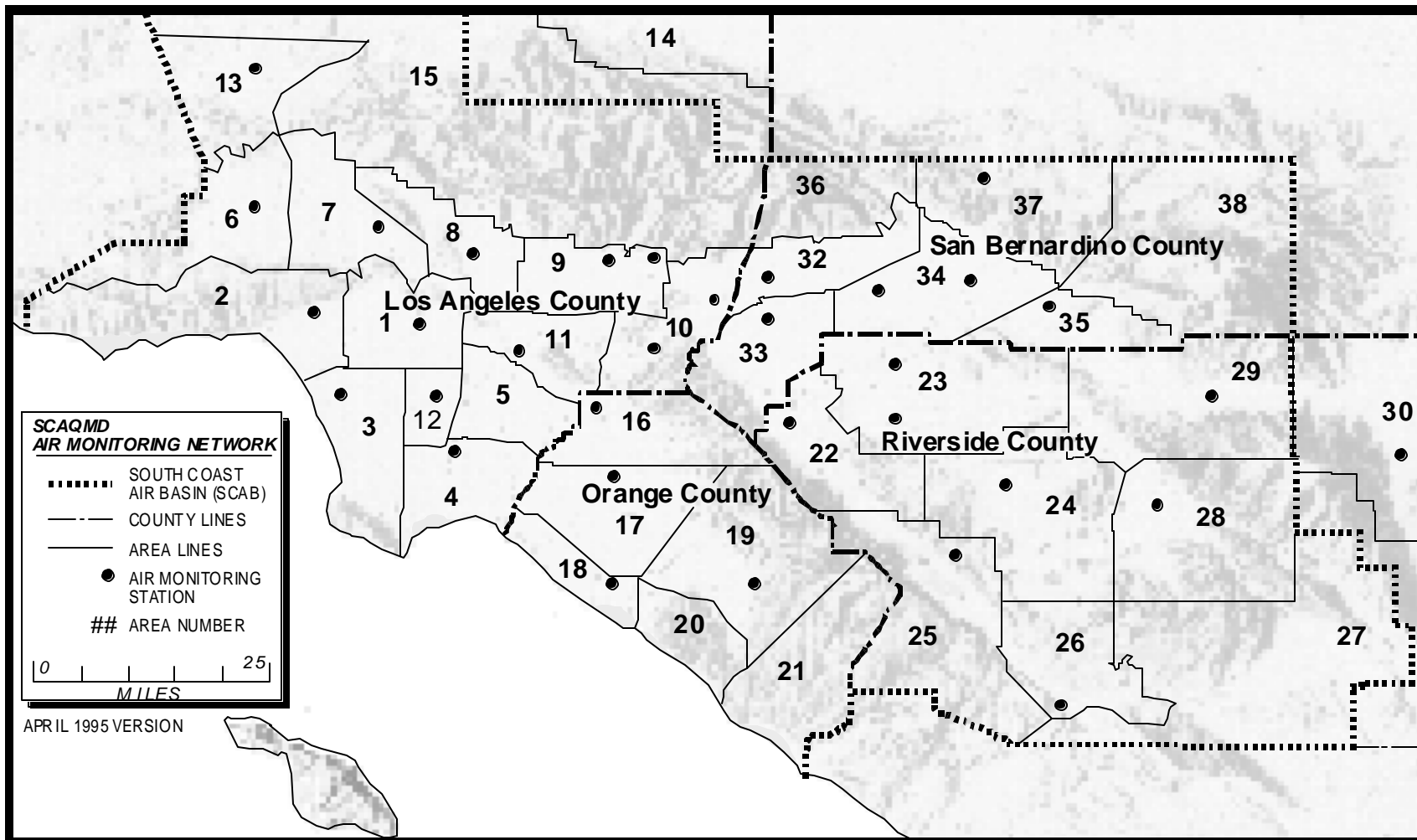


FIGURE A-1
 South Coast Air Basin and Adjoining Areas of Salton Sea Air Basin

TABLE A-4
Ozone - Number of Days Exceeding the
Federal Standard (12 pphm, 1-Hour Average)

STN#	LOCATION	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
LOS ANGELES COUNTY:																											
060	East San Gabriel Valley 1	129	137	155	146	129	137	104	123	129	117	126	111	125	112	84	73	91	79	72	63	26	11	19	2*	11	9
069	East San Fernando Valley	138	75	102	92	99	91	63	95	73	87	93	76	64	40	40	55	47	16	18	20	6	2	7	0	3	2
072	South Coastal Los Angeles County	3	4	8	12	6	13	6	16	13	11	10	4	7	3	0	0	6	1	1	0	0	0*	0	1	0	0
074	West San Fernando Valley	122	126	68	103	98	96	66	67	78	75	72	60	71	54	41	53	25	32	7	8	11	0	7	0	0	2
075	Pomona/Walnut Valley 1	108	120	136	126	99	97	66	102	98	98	89	72	91	61	60	60	56	45	47	47	16	7	18	2	3	1
076	Southwest Coastal Los Angeles County	9	4	13	7	0	4	2	9	8	4*	a)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
080	Southeast Los Angeles County	70	53	65*	47	40	56	44	67	60	58	39	40	29	37	21	23	32	12	--	--	--	--	--	--	--	--
084	South Central Los Angeles County 1	18*	3*	16	26	14*	15	13	27	22	16	16	11	12	7	3	1	4	0	0	0	1	0	0	0	0	0
085	South San Gabriel Valley	69*	130	120	110	107	94	66	98	92	79	79	63	67	61	43	48	45	33	21	20	32	6	10	0	2	1
087	Central Los Angeles	71	58	55	50*	59	74	48	69	53	56	48	36	24	34	32	23	23	8	14	5	24	0	5	1	1	0
088	West San Gabriel Valley	129	134	152	151	118	116	89	122	125	116	110	95	119	80	69	70	71	53	61	44	54	5	14	0	7	1
090	Santa Clarita Valley	120	132	121	140	96	123	94	85	86	93	87	67	107	71	62	65	71	44	66	26	68	13	16	0	1	9
091	Northwest Coastal Los Angeles County	32	14	34*	44	35	40	20	37	35	37	30	16	16	15	8	9	12	7	2	1	13	0	1	0	0	0
094	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	--	8	3	5	3	0	0	1	1	0	0	1	0	0	1	0	0
108	Pomona/Walnut Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	44*	26	23	2*	--	--	--	--	--	--
591	East San Gabriel Valley 2	--	--	--	--	--	135	126	134	130*	141	148	135	148	121	103	91	118	96	88	73	49	18	28	3	11	13
801	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1*	1*	0*	--
ORANGE COUNTY:																											
3176	Central Orange County 1	26*	14*	51	27	39	32	28	40	37	35	28	25	19	13	11	11	22	3	5	2	1	0	2	0*	1	0*
3177	North Orange County	32	37	69	62	63	60	39	64	59	57	49	41	33	36	35	28	31	13	9	4	5	1	5	0	1	0
3186	Saddleback Valley 1	26	17*	33	24	25	18	18	24	26	30	12	16	18	7	11	10	9	7	5	1	2	2	2	0	1*	--
3190	Central Orange County 2	20	18*	39	17	13	13	10	16	12	11	5	4	17	11	7	10	9	4	--	--	--	--	--	--	--	--
3195	North Coastal Orange County	3	6*	25	16	5	6	6	15	7	17	10	2	1*	--	3	5	3	1	0	0	1	0	0	0	0	0
3812	Saddleback Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2*	1
RIVERSIDE COUNTY:																											
4137	Coachella Valley 1**	33*	51	57	49*	49	57	37	40	36	25	31	33	35	37	27	22	21*	20	13	9	12	4*	8	1	0	6
4141	Hemet/San Jacinto Valley	17	31	20*	--	--	--	--	--	--	13	9	27	28	21	20	23	5	8	13	2	0*	--	--	--	--	--
4144	Metropolitan Riverside County	141	152	139	151	132	127	96	121	127	125	106	113	123	112	90	79	75	71	77	52	36	13*	32	3	3	7
4149	Perris Valley	109	132	109	118	103	118	90	88	75	96	79	82	82	78	62	71	83	73	59	36	31	6	8	0	15	19
4150	Banning/San Gorgonio Pass	37*	62	79	84	76	50	58	67	48	55	45	53	64	60	43	31	19	8	25	15	11	2	0*	b)	--	--
4155	Norco/Corona	102	116	113	114	99	101	67	97	85*	92	77	73	61	56	13	54	16	17	14	23	2*	--	--	--	--	--
4157	Coachella Valley 2**	--	35	37	16	--	30	18	33	19	16	--	--	--	16	10	13	8	3	0	3	0	0	2	1	0	0
4158	Lake Elsinore	55	74	45*	--	--	--	--	--	--	--	--	--	--	62	36	45	24	27	27	23	17	4	22	5	1	12
4163	Temecula Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	1	0*	0	0*	0*	--	--	--	--
4164	Banning Airport	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25	5	4	16
SAN BERNARDINO COUNTY:																											
5175	Northwest San Bernardino Valley	139*	151*	138*	135	131	139*	113*	120	115	110	111	101	122	97	64	67	81	55	79	67	35	12	30	4	10	14
5181	Central San Bernardino Mountains	47*	142	123	139	125	131	121	117	139	114	117	119	128	127	103	90	103	88	107	65	62	29	57	30	17	26
5197	Central San Bernardino Valley 1	145	160	155	164	146	147	96	127	136	126	121	116	124	112	92	74	88	65	91	57	38	10	32	4	7	13
5203	Central San Bernardino Valley 2	112	139	138	140	130	134	111	117	125	111	108*	117	121	115	78	79	85	65	96	61	63	32	39	14	7	18
5204	East San Bernardino Valley 1	96	123	136	139	127	116	103	109	116	113	93	120	130	116	81	91	103	95	98	69	65	35	43	12	11	21*
	District Maximum	145	160	155	164	146	147	126	134	139	141	148	135	148	127	103	91	118	96	107	73	68	35	57	30	17	26

a) Station relocated in 1986.

b) Station relocated in 1998.

* Less than 12 full months of data

** Salton Sea Air Basin

TABLE A-5
Ozone, 1976-2001
Annual Number of Days of First/Second Stage Episodes
(Days Maximum 1-Hour Average Ozone \geq 0.20 ppm/ \geq 0.35 ppm)

STN#	LOCATION	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
060	East San Gabriel Valley 1	47/1	64/0	76/5	71/10	74/7	65/2	40/1	63/3	55/0	48/1	45/0	26/0	33/0	30/0	13/0	12/0	16/0	11/0	2/0	3/0	1/0	0/0	1/0	0/0*	0/0	0/0
069	East San Fernando Valley	43/1	11/0	30/0	26/2	30/1	18/0	12/0	34/0	5/0	17/0	14/0	6/0	4/0	5/0	1/0	4/0	8/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
072	South Coastal Los Angeles County	0/0	0/0	0/0	1/0	1/0	1/0	1/0	1/0	1/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0*	0/0	0/0	0/0	0/0	0/0
074	West San Fernando Valley	33/0	37/0	16/0	24/0	36/1	12/0	4/0	11/0	6/0	9/0	5/0	2/0	4/0	5/0	0/0	2/0	0/0	0/0	0/0	0/0	1/0	0/0	0/0	0/0	0/0	0/0
075	Pomona/Walnut Valley 1	37/1	58/0	72/9	57/3	49/1	32/0	31/0	45/0	30/0	32/0	24/0	16/0	16/0	10/0	12/0	8/0	10/0	6/0	3/0	2/0	0/0	0/0	0/0	0/0	0/0	0/0
080	Southeast Los Angeles County	19/1	12/0	18/1*	16/0	5/0	18/0	7/0	23/0	17/0	11/0	4/0	4/0	5/0	4/0	0/0	0/0	1/0	0/0	--	--	--	--	--	--	--	--
084	South Central Los Angeles County	2/0*	0/0*	0/0	6/0	0/0*	1/0	2/0	3/0	4/0	1/0	1/0	1/0	1/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
085	South San Gabriel Valley	26/1*	52/0	48/5	38/3	38/1	28/0	18/1	35/0	24/0	19/0	18/0	7/0	12/0	16/0	0/0	6/0	5/0	0/0	2/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
087	Central Los Angeles	11/0	3/0	16/0	14/0	10/0	8/0	7/1	12/0	8/0	9/0	8/0	2/0	2/0	1/0	2/0	0/0	1/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
088	West San Gabriel Valley	51/0	55/0	85/8	78/11	56/3	48/0	33/1	59/0	49/0	41/1	33/0	15/0	18/0	17/0	7/0	10/0	10/0	5/0	2/0	1/0	0/0	0/0	0/0	0/0	0/0	0/0
090	Santa Clarita Valley	38/0	59/0	45/0	59/0	46/2	37/0	17/0	19/0	18/0	15/0	15/0	2/0	28/0	11/0	6/0	8/0	4/0	3/0	6/0	1/0	0/0	0/0	0/0	0/0	0/0	0/0
091	Northwest Coastal Los Angeles County	4/0	0/0	10/0*	7/0	3/0	3/0	3/0	6/0	5/0	4/0	1/0	1/0	2/0	1/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
094	Southwest Coastal Los Angeles County	1/0	0/0	2/0	0/0	0/0	0/0	0/0	0/0	1/0	0/0	0/0	1/0	1/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
108	Pomona/Walnut Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3/0*	2/0	0/0	0/0*	--	--	--	--	--
591	East San Gabriel Valley 2	--	--	--	--	30/5*	61/2	62/2	74/2	67/0*	68/5	70/1	51/0	54/0	37/0	29/0	34/0	30/0	19/0	10/0	9/0	2/0	0/0	3/0	0/0	0/0	0/0
3176	Central Orange County 1	4/0*	0/0*	13/0	5/0	6/0	5/0	7/0	10/0	5/0	11/0	1/0	3/0	3/0	4/0	0/0	2/0	1/0	0/0	1/0	0/0	0/0	0/0	0/0	0/0*	0/0	0/0*
3177	North Orange County	15/0	8/0	24/1	21/1	14/0	15/0	12/0	15/0	15/0	13/0	8/0	6/0	3/0	5/0	4/0	1/0	1/0	0/0	2/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
3186	Saddleback Valley	3/0	2/0*	10/0	6/0	3/0	5/0	3/0	10/0	3/0	7/0	1/0	1/0	2/0	2/0	0/0	1/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0*	--
3188	Capistrano Valley	2/0*	1/0	2/0*	--	--	--	--	--	--	--	--	--	--	0/0*	--	--	--	--	--	--	--	--	--	--	--	--
3190	Central Orange County 2	2/0	0/0*	5/0	2/0	3/0	0/0	2/0	2/0	0/0	0/0	0/0	0/0	1/0	0/0	0/0	0/0	0/0	0/0	--	--	--	--	--	--	--	--
3191	North Orange County	17/0	10/0	9/0	14/2	13/0	4/0*	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3195	North Coastal Orange County	0/0	0/0*	3/0	1/0	0/0	1/0	0/0	2/0	1/0	1/0	0/0	0/0	0/0	0/0*	--	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
4137	Coachella Valley 1**	3/0*	5/0	3/0	3/0*	4/0	0/0	0/0	0/0	1/0	2/0	0/0	0/0	1/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0*	0/0	0/0	0/0	0/0
4141	Hemet/San Jacinto Valley	0/0	2/0	2/0*	--	--	--	--	--	1/0	0/0	0/0	0/0	0/0	0/0	1/0	0/0	0/0	0/0	0/0	0/0	0/0*	--	--	--	--	--
4144	Metropolitan Riverside County	46/2	66/1	62/2	55/0	67/4	34/0	26/0	42/1	29/0	35/1	19/0	20/0	16/0	18/0	15/0	17/0	6/0	5/0	2/0	3/0	1/0	0/0*	1/0	0/0	0/0	0/0
4149	Perris Valley	13/0	39/0	38/0	26/0	20/0	18/0	10/0	13/0	6/0	8/0	3/0	1/0	1/0	4/0	0/0	5/0	1/0	3/0	0/0	1/0	0/0	0/0	0/0	0/0	0/0	0/0
4150	Banning/San Gorgonio Pass	20/0*	13/0	22/0	22/0	13/0	7/0	3/0	12/0	5/0	8/0	1/0	3/0	7/0	6/0	4/0	1/0	0/0	0/0	1/0	0/0	0/0	0/0	0/0*	--	--	--
4155	Norco/Corona	26/0	31/1	34/2	24/0	32/0	24/1	15/1	29/1	19/0*	20/1	12/0	9/0	7/0	3/0	0/0	7/0	1/0	0/0	0/0	0/0	0/0	--	--	--	--	--
4157	Coachella Valley 2**	0/0*	0/0	0/0	1/0	0/0	0/0	0/0	0/0	1/0	--	0/0	--	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
4158	Lake Elsinore	1/0	10/0	7/0*	--	--	--	--	--	--	--	--	--	0/0*	4/0	0/0	1/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
4163	Temecula Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0/0	0/0	0/0*	0/0	0/0*	0/0*	--	--	--	--
5175	Northwest San Bernardino Valley	61/1*	85/2*	68/2*	59/2	73/4	62/1	0/0*	59/1*	41/0	39/0	38/0	23/0	25/1	19/0	12/0	14/0	15/0	7/0	7/0	6/0	2/0	0/0	1/0	0/0	0/0	0/0
5181	Central San Bernardino Mountains	11/0*	63/0	73/0	80/3	54/0	49/1	29/0	48/0	49/0	41/0	34/0	22/0	38/0	30/0	16/0	15/0	22/0	5/0	12/0	6/0	4/0	1/0	10/0	0/0	0/0	0/0
5182	East San Bernardino Valley 2	28/0	39/0	56/0	0/0*	67/0	19/0*	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5197	Central San Bernardino Valley 1	69/1	98/6	98/11	95/9	84/6	73/1	34/0	56/0	45/0	48/0	42/0	28/0	23/0	28/0	20/0	16/0	19/0	5/0	9/0	2/0	1/0	0/0	1/0	0/0	0/0	0/0
5198	Southwest San Bernardino Valley	39/1	42/3	22/2*	--	--	--	--	--	--	15/0	14/0	0/0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5203	Central San Bernardino Valley 2	51/0	70/1	72/1	62/0	72/2	58/1	38/0	49/0	36/0	30/0	41/0*	27/0	31/0	22/0	8/0	9/0	17/0	4/0	7/0	4/0	2/0	1/0	1/0	0/0	0/0	0/0
5204	East San Bernardino Valley 1	25/1	48/0	64/2	57/0	61/0	20/0	30/0	41/0	26/0	31/0	22/0	26/0	25/0	17/0	11/0	16/0	7/0	8/0	8/0	4/0	1/0	1/0	1/0	0/0	0/0	0/0*

* Less than 12 full months of data.

** Salton Sea Air Basin.

TABLE A-6
Ozone - Annual Maximum 1-Hour, ppm 1955-2001

LOCATION	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
087 Central Los Angeles	.68	.47	.53	.61	.61	.41	.45	.50	.50	.46	.58	.50	.36	.46	.30	.33	.24	.25	.52	.25	.25	.34	.21
060 East San Gabriel Valley 1	-	-	.42	.45	.56	.49	.45	.43	.34	.40	.54	.53	.65	.44	.54	.58	.48	.49	.46	.38	.32	.38	.32
069 East San Fernando Valley	.30*	.33	.43	.39	.47	.33	.33/	.33	.38	.39	.40	.32	.47	.42	.38	.35	.31	.28	.29	.35	.27	.35	.31
091 Northwest Coastal Los Angeles County	-	-	-	-	-	-	-	.40*	.40	.32	.39	.29	.36	.44	.30	.24	.26	.19	.39	.19	.19	.28	.18/
072 South Coastal Los Angeles County	-	-	-	.37	.30	.37	.34	.33/	.28	.27	.34	.27	.21	.33	.22	.18	.27	.17	.20	.27	.14	.16	.15
074 West San Fernando Valley	-	-	-	-	-	-	-	-	-	-	.47	.44	.41	.34	.39	.37	.32	.29	.28	.28	.30	.27	.34
075 Pomona/Walnut Valley 1	-	-	-	-	-	-	-	-	-	-	.44*	.44	.43	.49	.45	.48	.35	.37	.32	.31	.33	.36	.32
076 Southwest Coastal Los Angeles County	-	-	-	-	-	-	-	-	-	-	.32	.37	.33	.23	.25	.23	.21	.17	.24	.15	.18	.22	.17
094 Southwest Coastal Los Angeles County	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
080 Southeast Los Angeles County	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.43*	.36	.39	.29	.28	.35	.25	.37	.30
090 Santa Clarita Valley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.20	.41	.30	.29	.36	.26	.30	.33	.33
088 West San Gabriel Valley	-	.46	.36/	.44*	.47	.54	.44	.46	.41	.42	.46	.43	.40/	.48*	.52	.51	.53	.38*	.45	.34	.32	.34	.32
084 South Central Los Angeles County 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.22*	.28	.19	.24	.24
801 South Central Los Angeles County 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
085 South San Gabriel Valley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.35	.32
591 East San Gabriel Valley 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3176 Central Orange County 1	-	-	-	-	-	-	-	-	.27	.23	.41	.31	.30	.28	.30	.29	.34	.28	.26	.24	.13*	.30	.19
3177 North Orange County 1	-	-	-	-	-	-	-	-	-	-	-	-	.23*	.26	.43	.30	.34	.32	.30	.44	.28	.30	.25
3195 North Coastal Orange County	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.19	.21	.22	.18	.16	.18	
3186 Saddleback Valley 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.19	.38	.19	.23	.20	
3812 Saddleback Valley 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3188 Capistrano Valley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.20	.25	.18	.20	.22	
3190 Central Orange County 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.14	-	.27	.21	.26	.18	
3191 North Orange County 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.11	.33	.33	.30	
4137 Coachella Valley 1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.31	.25	.25	.24	.21	.22	.21
4157 Coachella Valley 2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.26	.20	.17	.18	.20	.16	.19	
4155 Norco/Corona	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05*	.30	.35	.31	.15*	.33	.36	
4141 Hemet/San Jacinto Valley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.22	.20	.18	.19	.25	
4144 Metropolitan Riverside County 1	-	-	-	-	-	-	-	-	.28	.40	.29	.31	.40	.34*	-	-	.45	.40*	.31	.32	.35	.36	.35
4149 Perris Valley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.27*	.26	.27	.22	.28	
4150 San Geronio Pass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.37	.19	.26	.32*	.24	.27	.28	.27	
4164 Banning Airport	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4163 Temecula Valley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.15	.18	.21	.17	
4158 Lake Elsinore	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.23*	.30	.20	.23	
5203 Central San Bernardino Valley 2	-	-	-	-	-	-	-	-	.28	.32	.32	.31	.33	.28	.27	.36	.26	.34	.34	.27	.38	.32	.37
5204 East San Bernardino Valley	-	-	-	-	-	-	-	-	-	-	-	.12*	.32	.30	.42	.28	.31	.34	.31	.32	.35	.33	
5171 Southwest San Bernardino Valley	-	-	-	-	-	-	-	-	-	-	.32*	.21	.21	.22	.08*	-	-	.36	.34	.33	.36	.37	
5175 Northwest San Bernardino Valley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.48	.51	.39	-	-	
5174 Northwest San Bernardino Valley (ARB)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.51	.44	.41	.38*	.38	
5197 Central San Bernardino Valley 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.42*	.49	.38	.38	.39	
5177 Central San Bernardino Mountains 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.13*	.27	.14*	.15	.22	
5181 Central San Bernardino Mountains 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.13*	.26*	.27	.23	.32	
District Maximum	.68	.47	.53	.61	.61	.54	.45	.50	.50	.46	.58	.53	.65	.49	.54	.58	.53	.49	.52	.51	.41	.38	.39

* Incomplete data.

/ Station location change

** Salton Sea Air Basin

TABLE A-6 (continued)
Ozone - Annual Maximum 1-Hour, ppm 1955-2001

LOCATION	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
087 Central Los Angeles	.30	.31/	.29	.32	.40	.26	.29	.30	.22	.22	.21	.25	.20	.19	.20	.16	.19	.17	.14	.12	.15	.13	.14	.12
060 East San Gabriel Valley 1	.40	.45	.41	.35	.36	.39	.31	.36	.31	.30	.30	.33	.23	.28	.27	.24	.25	.21	.20	.16	.20	.14	.17	.19
069 East San Fernando Valley	.30	.39	.35	.27	.25	.31	.26	.30	.28	.23	.24	.20	.20	.22	.22	.18	.17	.17	.14	.13	.18	.12	.15	.13
091 Northwest Coastal Los Angeles County	.24/	.26	.21	.23	.28	.23	.27/	.27	.20	.28	.24	.25	.16	.18	.17	.18	.16	.14	.14	.11	.13	.12	.10	.10
072 South Coastal Los Angeles County	.19	.21	.20	.23	.22	.30	.27	.23	.18	.17	.16	.16	.12	.11	.15	.14	.16	.11	.11	.10	.12	.13	.12	.09
074 West San Fernando Valley	.27	.33	.38	.25	.22	.26	.26	.25	.22	.22	.25	.23	.19	.22	.17	.19	.14	.15	.21	.12	.16	.10	.11	.14
075 Pomona/Walnut Valley 1	.41	.35	.37	.33	.31	.34	.31	.33	.27	.29	.29	.25	.24	.24	.26	.21	.24	.22	.19	.16	.18	.14	.15	.14
076 Southwest Coastal Los Angeles County	.30	.19	.11	.19	.16	.18	.22	.17/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
094 Southwest Coastal Los Angeles County	-	-	-	-	-	-	-	-	.19	.20	.22	.19	.10	.11	.15	.13	.11	.12	.13	.11	.09	.15	.10	.10
080 Southeast Los Angeles County	.36	.32	.27	.27	.31	.32	.30	.32	.25	.23	.29	.26	.19	.19	.22	.19	-	-	-	-	-	-	-	-
088 West San Gabriel Valley	.42	.44	.41	.33	.37/	.34	.30	.37	.26	.28	.29	.27	.26	.23	.27	.22	.26	.21	.17	.14	.17	.12	.16	.16
090 Santa Clarita Valley	.32	.32	.36	.29	.26/	.29	.27	.24	.24	.21	.30	.25	.23	.24	.22	.22	.26	.21	.17	.16	.18	.12	.13/	.18
084 South Central Los Angeles County 1	.18	.29	.18	.21	.26	.23	.27	.21	.20	.24	.21	.14	.15	.16	.17	.12	.12	.09	.10	.08	.09	.12	.09	.08
801 South Central Los Angeles County 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.13*	.11*	.12*	-
085 South San Gabriel Valley	.43	.39	.39	.35	.39	.33	.27	.31	.24	.28	.30	.26	.19	.26	.26	.19	.22	.18	.14	.13	.18	.12	.14	.13
591 East San Gabriel Valley 2	-	-	.49	.39	.36	.38	.34	.39	.35	.33	.34	.34	.29	.32	.30	.28	.30	.22	.21	.17	.22	.14	.17	.19
3176 Central Orange County 1	.29	.33	.28	.26	.26	.30	.25	.25	.20	.22	.27	.24	.18	.25	.22	.17	.21	.13	.13	.10	.11	.10*	.13	.11
3177 North Orange County 1	.35	.38	.31	.27	.32	.27	.32	.34	.25	.24	.29	.26	.21	.21	.21	.19	.25	.16	.15	.13	.18	.12	.14	.11
3195 North Coastal Orange County	.22	.21/	.16	.20	.18	.25	.25	.21	.17	.16	.13	-	.15	.17	.15	.13	.12	.11	.10	.10	.12	.10	.10	.10
3186 Saddleback Valley 1	.34	.32	.34	.33	.27	.29	.30	.28	.23	.20	.21	.23	.19	.24	.16	.16	.18	.15	.14	.13	.16	.10	.13	-
3812 Saddleback Valley 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.15	.13
3188 Capistrano Valley	.32	-	-	-	-	-	-	.19	-	-	-	.15*	-	-	-	-	-	-	-	-	-	-	-	-
3190 Central Orange County 2	.27	.26	.22	.18	.23	.20	.19	.19	.15	.17	.23	.16	.17	.17	.18	.15	-	-	-	-	-	-	-	-
3191 North Orange County 2	.27	.39	.33	.23*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4137 Coachella Valley 1**	.20	.24	.21	.19	.19	.19	.20	.24	.18	.17	.20	.19	.17	.18	.15*	.17	.17	.16	.16	.16	.17	.13	.12	.14
4157 Coachella Valley 2**	.17	.21	.11	.18	.17	.18	.19	.20	-	.16	-	.16	.16	.18	.14	.16	.12	.14	.12	.11	.13	.13	.11	.11
4155 Norco/Corona	.40	.33/	.34	.37	.35	.35	.30	.35	.27	.24	.25	.23	.17	.22	.23	.16	.17	.19	.16	-	-	-	-	-
4141 Hemet/San Jacinto Valley	.27	-	-	-	-	-	.18*	.23	.18	.18	.18	.19	.22	.19	.15	.18	.16	.15	.12	-	-	-	-	-
4144 Metropolitan Riverside County	.39	.34	.37	.30	.31	.36	.32	.35	.25	.29	.28	.27	.29	.24	.26	.26	.25	.21	.20	.19	.20	.14	.14	.14
4149 Perris Valley	.32	.25	.29	.24	.28	.26	.22	.29	.22	.20	.23	.21	.19	.20	.21	.20	.18	.20	.18	.14	.15	.11	.16	.15
4150 San Geronio Pass	.30	.27	.26	.23	.24	.26	.25	.29	.22	.21	.26	.23	.22	.20	.16	.16	.20	.18	.19	.13	.12/	-	-	-
4164 Banning Airport	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.17	.14	.14	.15
4163 Temecula Valley	.23	-	-	-	-	-	-	-	-	-	-	-	-	.17*	.13	.13	.10*	.11	.10	.10*	-	-	-	-
4158 Lake Elsinore	.30	-	-	-	-	-	-	-	-	-	-	.24	.19	.20	.17	.19	.19	.19	.15	.16	.17	.14	.13	.15
5203 Central San Bernardino Valley 2	.36	.34	.36	.36/	.30	.32	.30	.27/	.30	.25	.28	.30	.29	.25	.28	.21	.25	.20	.24	.20	.21	.16	.15	.18
5204 East San Bernardino Valley	.39	.34/	.32	.24	.29	.30	.29	.33/	.29	.24	.29	.27	.30	.25	.27	.27	.23	.24	.22	.20	.22	.15	.15	.17*
5171 Southwest San Bernardino Valley	.36	-	-	-	-	-	.32*	.32	.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5175 Northwest San Bernardino Valley	-	-	-	-	-	.36	.32	.33	.29	.28	.35	.32	.29	.27	.28	.24	.25	.24	.22	.19	.21	.15	.18	.17
5174 Northwest San Bernardino Valley (ARB)	.35	.37	.44	.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5197 Central San Bernardino Valley 1	.42	.42	.42	.35/	.31	.32	.32	.34	.31	.29	.29	.32	.27	.29	.28	.24	.25	.22	.22	.17	.20	.14	.17	.17
5177 Central San Bernardino Mountains 2	.17	-	-	-	-	-	.26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5181 Central San Bernardino Mountains 1	.33	.40	.31	.35	.32	.28	.34	.30	.26	.29	.29	.27	.33	.27	.28	.24	.27	.26	.20	.21	.24	.17	.18	.17
District Maximum	.43	.45	.49	.39	.40	.39	.34	.39	.35	.33	.35	.34	.33	.32	.30	.28	.30	.26	.24	.21	.24	.17	.18	.19

* Incomplete data.

/ Station location change

** Salton Sea Air Basin

TABLE A-7
Carbon Monoxide - Number of Days Maximum 8-Hour Average
Exceeded the Federal Standard (≥ 9.5 ppm)

STN#	LOCATION	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
LOS ANGELES COUNTY:																												
060	East San Gabriel Valley	1	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
069	East San Fernando Valley	100	72	54	54	60	48	36	21	18	18	16	14	15	21	10	8	3	0	5	4	0*	0	0	0	0	0	0
072	South Coastal Los Angeles County	52	41*	31	20	8	3	4	8	1	5	4	0	1	2	0	0	0	0*	0	0	0*	0	0	0	0	0	0
074	West San Fernando Valley	52	45	47	28	28	30	26	17	8	10	12	2	4	13	12	9	1	0	4	2	0	1	0	0	1	0	
075	Pomona/Walnut Valley	6	9	6	1	4	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
076	Southwest Coastal Los Angeles County	83	62	62	50	67	46	44	40	58	45	a)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
080	Southeast Los Angeles County	41	33	28	18*	19	10	10	6	0	4	0	1	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--
084	South Central Los Angeles County 1	107	83	79	64	65	54	44	29	49	32	43	38	55	61	42	37	31	22	22	13	20	14	10	8	2	0	
085	South San Gabriel Valley	24*	41	39	26	19	6	4	5	0	4	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
087	Central Los Angeles	64	53	36	14	16	16	9	11	0	2	2	2	4	1*	2	0	2	0	0	0	0	0	0	0	0	0	0
088	West San Gabriel Valley	34	27	26	21	22	19	14	10	0	5	2	3	4	0	2	1	0	0	0	0	0	0	0	0	0	0	0
090	Santa Clarita Valley	0	2	0	0	--	--	--	--	--	--	--	--	--	0*	0	0	0	0	0	0	0	0	0	0	0	0	0
091	Northwest Coastal Los Angeles County	53	33	19*	27	34	21	19	11	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
094	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	--	16	15	25	24	10	7	7	3	5	0	5	1	0	0	0	0	0
801	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8*	6	1*	--	
ORANGE COUNTY:																												
3176	Central Orange County	60	30	21	31	44	17	1	4	4	3	1	0	5	6	2	0	0	0	0	0	0	0	0	0*	0	0*	
3177	North Orange County	70*	50	17	18	19*	10	10	8	1	6	2	3	3	7	1	0	0	0	0	0	0	0	0	0	0	0	0
3186	Saddleback Valley 1	--	--	--	--	--	0*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	--	
3195	North Coastal Orange County	55	15	7	16	6	5	2	1	1	5	3	0	2	6*	4	0	0	0	0	0	0	0	0	0	0*	0	
3812	Saddleback Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0*	0	
RIVERSIDE COUNTY:																												
4137	Coachella Valley 1**	0*	0	0	0*	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0	0	0	0	0	0	0	0	0
4144	Metropolitan Riverside County 1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0*	0	0	0	0	
4146	Metropolitan Riverside County 2	1*	--	--	--	--	--	--	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0*	0	0	
4149	Perris Valley	0*	0*	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4150	San Geronio Pass	0*	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4155	Norco/Corona	0	1*	0*	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4157	Coachella Valley 2**	0*	0*	0	0*	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0*	--	
4158	Lake Elsinore	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	
SAN BERNARDINO COUNTY:																												
5175	Northwest San Bernardino Valley	0*	0*	0	0	0	0*	--	2	0	0	0	0	0	0	0	0*	--	--	--	--	--	--	--	--	0	0	
5181	Central San Bernardino Mountains	0*	0*	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5197	Central San Bernardino Valley 1	0	0*	1	1	0*	0	0	0	0	0	0	0	0	0	0	0*	--	--	--	--	--	--	--	--	--	--	
5203	Central San Bernardino Valley 2	0	2*	0	0	0	0	0	0	0	0*	0*	0	0	0	0	0	0	0	0	0	0	0*	0	0	0*	0	
5204	East San Bernardino Valley 1	0	0	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

a) Station relocated in 1986.

* Incomplete data

** Salton Sea Air Basin

TABLE A-8
Carbon Monoxide - Number of Days Maximum 8-Hour Average
Exceeded the Federal Alert Level (> 15 ppm)

STN#	LOCATION	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
LOS ANGELES COUNTY:																												
060	East San Gabriel Valley	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
069	East San Fernando Valley	30	12	6	3	12	11	9	4	0	2	1	0	0	0	0	0	0	0	0	0	0*	0	0	0	0	0	0
072	South Coastal Los Angeles County	0	1*	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0*	0	0	0*	0	0	0	0	0	0	0
074	West San Fernando Valley	13	12	8	3	9	13	4	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
075	Pomona/Walnut Valley	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
076	Southwest Coastal Los Angeles County	28	14	9	8	18	7	3	7	7	9	a)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
080	Southeast Los Angeles County	0	0	1	0*	1	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--
084	South Central Los Angeles County 1	37	21	17	12	25	10	7	7	7	10	7	7	14	13	4	3	3	0	0	0	1	1	0	0	0	0	0
085	South San Gabriel Valley	0*	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
087	Central Los Angeles	4	6	1	1	0	0	0	0	0	0	0	0	0	0*	0	0	0	0	0	0	0	0	0	0	0	0	0
088	West San Gabriel Valley	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
090	Santa Clarita Valley	0	0	0	0	--	--	--	--	--	--	--	--	--	0*	0	0	0	0	0	0	0	0	0	0	0	0	0
091	Northwest Coastal Los Angeles County	6	2	1*	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
094	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	3*	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
801	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0*	0	0*	--	--	
ORANGE COUNTY:																												
3176	Central Orange County	5	3	1	0	11	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0*
3177	North Orange County	38*	7	0	0	0*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3186	Saddleback Valley 1	--	--	--	--	--	0*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	--	--
3195	North Coastal Orange County	15	0	0	1	0	0	0	0	0	0	0	0	0	0*	0	0	0	0	0	0	0	0	0	0	0	0*	0
3812	Saddleback Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0*	0	
RIVERSIDE COUNTY:																												
4137	Coachella Valley 1**	0*	0	0	0*	0	0	0	0	0	0	0	0	0	0	0	0	0*	0*	0	0	0	0	0	0	0	0	0
4144	Metropolitan Riverside County 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4146	Metropolitan Riverside County 2	0*	--	--	--	--	--	--	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0	0	0
4149	Perris Valley	0*	0*	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4150	San Geronio Pass	0*	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4155	Norco/Corona	0	0*	0*	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4157	Coachella Valley **	0*	0*	0*	0*	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0*	--	
SAN BERNARDINO COUNTY:																												
5175	Northwest San Bernardino Valley	0*	0*	0	0	0	0*	--	0	0	0	0	0	0	0	0	0*	--	--	--	--	--	--	--	--	--	--	--
5181	Central San Bernardino Mountains	0*	0*	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5197	Central San Bernardino Valley 1	0	0*	0	0	0*	0	0	0	0	0	0	0	0	0	0	0*	--	--	--	--	--	--	--	--	--	--	--
5203	Central San Bernardino Valley 2	0	0*	0	0	0	0	0	0	0	0*	0*	0	0	0	0	0	0	0	0	0	0	0*	0	0	0*	0	0
5204	East San Bernardino Valley 1	0	0	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
District Maximum		38	21	17	12	25	13	9	7	7	10	7	7	14	13	4	3	3	0	0	0	1	0	0	0	0	0	0

a) Station relocated in 1986.

* Incomplete data.

** Salton Sea Air Basin

TABLE A-9
Carbon Monoxide
Annual Maximum 8-Hour Average, ppm
1976-2001

STN#	LOCATION	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
LOS ANGELES COUNTY:																												
060	East San Gabriel Valley	10.6	10.8	8.6	9.0	8.8	9.5	6.9	6.6	4.6	4.9	5.5	6.0	6.0	5.8	5.1	5.9	4.9	4.0	4.5	6.3	4.0	4.3	3.9	3.9	4.9	2.9	
069	East San Fernando Valley	26.3	21.9	16.8	15.4	24.8	21.1	16.4	16.6	12.0	16.1	16.4	12.5	11.9	13.9	13.0	10.6	10.5	8.4	10.7	12.0	9.3	7.4	7.5	9.0	6.1	4.9	
072	South Coastal Los Angeles County	14.6	17.3	16.8	12.1	12.9	11.3	11.6	12.1	10.3	15.7	10.3	9.4	10.3	10.1	9.1	9.3	8.1	6.9	8.9	6.6	6.9	6.7	6.6	5.4	5.8	4.7	
074	West San Fernando Valley	20.9	20.5	24.3	19.5	19.5	21.6	19.4	16.0	11.0	14.1	15.7	12.1	13.1	12.5	14.9	13.5	9.9	9.0	10.8	10.3	8.5	9.8	9.3	7.6	9.8	6.0	
075	Pomona/Walnut Valley	11.7	12.6	12.0	9.6	10.8	9.6	9.1	8.0	7.3	7.4	8.7	10.0	8.6	7.4	7.5	7.1	8.3	5.5	6.8	6.1	5.0	5.0	7.3	6.7	4.9	3.4	
076	Southwest Coastal Los Angeles County	25.3	20.4	24.3	21.4	21.6	19.2	19.2	18.4	19.7	24.0	a)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
080	Southeast Los Angeles County	14.4	13.6	15.5	14.1	15.8	13.7	12.7	13.6	9.4	14.6	8.7	9.7	7.3	8.8	9.0	7.5	9.37	5.86	7.7	--	--	--	--	--	--	--	
084	South Central Los Angeles County 1	23.3	27.4	21.1	23.4	25.8	25.3	21.3	20.9	18.9	27.7	19.7	19.6	27.5	21.8	16.8	17.4	18.75	14.63	18.10	13.86	17.3	17.0	13.4	11.0	10.0	7.7	
085	South San Gabriel Valley	14.9	14.8	18.3	12.1	14.5	11.9	11.9	10.9	8.7	13.1	10.7	10.0	9.9	10.7	9.4	9.1	8.62	6.43	9.29	7.86	8.1	6.2	6.1	5.6	5.3	4.0	
087	Central Los Angeles	17.0	21.3	15.4	15.7	14.0	14.9	11.9	13.1	9.1	9.9	11.6	10.9	11.4	9.8	9.9	9.0	9.50	6.75	8.43	8.37	8.4	7.9	6.1	6.3	6.0	4.6	
088	West San Gabriel Valley	12.4	16.6	13.3	12.5	13.6	11.8	12.9	12.3	8.0	11.3	10.1	11.3	10.6	8.4	10.0	9.5	7.25	6.25	8.50	9.12	7.1	6.0	6.3	6.6	7.4	5.0	
090	Santa Clarita Valley	6.8	10.8	5.8	6.4	4.5	--	--	--	--	--	--	--	--	5.4	4.6	5.1	3.71	3.86	3.86	4.12	3.9	6.8	3.4	3.6	4.9	3.1	
091	Northwest Coastal Los Angeles County	17.3	16.1	15.5	19.3	16.3	14.8	14.6	12.9	11.6	10.7	8.6	7.5	8.6	8.0	8.0	6.1	5.87	5.43	6.00	5.62	4.5	4.4	4.5	3.8	4.3	3.0	
094	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	--	15.0	14.1	15.9	16.4	12.7	11.3	12.29	10.71	12.00	8.86	11.6	10.3	9.4	8.4	7.0	5.1	
801	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.5	11.7	9.5	--	
ORANGE COUNTY:																												
3176	Central Orange County	24.8	15.9	15.5	13.8	21.3	13.4	9.6	10.9	14.4	17.0	9.7	8.7	12.0	12.1	11.7	8.6	9.37	7.71	8.62	8.00	7.5	5.8	5.3	5.3	6.8	4.7	
3177	North Orange County	24.0	21.6	13.5	13.0	13.8	13.0	11.9	11.7	9.6	14.0	10.3	10.6	9.9	10.7	9.6	8.0	9.14	6.00	8.75	6.62	6.9	6.0	6.1	5.3	6.1	4.7	
3186	Saddleback Valley 1	--	--	--	--	--	7.0	5.3	5.7	6.1	7.7	4.9	6.3	5.1	5.1	5.6	4.8	7.25	4.13	5.37	4.00	4.0	3.6	3.1	2.5	2.3	--	
3195	North Coastal Orange County	20.6	12.4	12.8	15.9	13.9	11.7	10.4	10.6	9.6	13.3	10.4	8.4	11.6	12.7	10.7	8.1	9.14	7.33	7.86	6.57	7.3	5.8	7.0	6.4	6.3	4.6	
3812	Saddleback Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.3	2.4	
RIVERSIDE COUNTY:																												
4137	Coachella Valley 1**	3.1	3.5	3.1	3.0	3.6	3.8	2.6	2.8	2.1	2.6	3.6	2.9	2.1	2.9	2.3	2.5	2.4	2.00	1.87	1.50	1.6	1.4	1.6	1.8	1.6	1.5	
4144	Metropolitan Riverside County 1	8.6	9.5	7.6	8.1	7.4	7.5	6.4	6.3	6.3	5.7	6.0	6.1	6.8	10.3	6.3	7.4	5.25	7.13	5.75	5.71	5.0	5.8	4.6	4.4	4.3	3.4	
4146	Metropolitan Riverside County 2	9.5	--	--	--	--	--	7.9	8.9	9.1	8.3	7.6	10.0	8.5	7.3	6.9	6.12	6.25	7.25	6.50	5.4	5.0	4.6	4.1	4.3	4.5	--	
4149	Perris Valley	7.6	6.5	5.1	5.0	4.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4150	San Geronio Pass	4.6	4.8	3.1	5.0	2.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4155	Norco/Corona	8.0	11.1	7.5	6.6	9.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4157	Coachella Valley 2**	7.1	6.0	6.5	4.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.1	--	
4158	Lake Elsinore	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0	2.0	
SAN BERNARDINO COUNTY:																												
5175	Northwest San Bernardino Valley	6.8	5.4	6.4	6.3	9.0	6.6	1.9	12.5	5.6	6.3	6.6	5.1	5.0	5.4	6.6	4.6	--	--	--	--	--	--	--	--	2.6	1.8	
5181	Central San Bernardino Mountains	5.6	5.9	6.8	6.3	4.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5197	Central San Bernardino Valley 1	7.3	8.4	9.8	9.8	8.5	7.6	4.4	5.1	4.4	4.0	5.9	4.0	5.6	5.8	4.9	4.4	--	--	--	--	--	--	--	--	--	--	
5203	Central San Bernardino Valley 2	9.3	12.1	8.5	7.6	8.1	6.0	6.9	5.4	5.1	5.3	6.7	6.7	7.6	8.1	6.0	7.0	5.9	6.0	6.5	6.3	4.6	6.0	4.6	4.0	4.3	3.3	
5204	East San Bernardino Valley 1	9.1	8.4	6.4	6.8	4.4	4.9	3.0	3.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	District Maximum	26.3	27.4	24.3	23.4	25.8	25.3	21.3	20.9	19.7	27.7	19.7	19.6	27.5	21.8	16.8	17.4	18.8	14.6	18.1	13.9	17.3	17.0	13.5	11.7	10.0	7.7	

a) Station relocated in 1986.

** Salton Sea Air Basin

TABLE A-10
Suspended Particulates (PM₁₀)
Annual Arithmetic Mean, µg/m³
1985-2001

STN#	LOCATION	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
LOS ANGELES COUNTY:																			
060	East San Gabriel Valley 1	67	61	68	63	61	55	66	47	43	44	49	45	46	41	56	46	45	
069	East San Fernando Valley	70	63	60	62	65	52	55	49	45	38	42	42	45	36	44	39	41	
072	South Coast Los Angeles County	55	56	50	52	51	44	40	39	37	40	39	35	41	32	39	38	37	
087	Central Los Angeles	70	59	57	58	61	53	57	48	47	45	43	41	43	37	45	40	44	
090	Santa Clarita Valley	--	--	--	--	54	43	47	35	33	36	37	33	33	30	38	33	32	
094	Southwest Coastal Los Angeles County	--	--	--	--	50	41	39	33	37	36	36	33	36	33	36	36	37	
108	Pomona/Walnut Valley	--	--	--	--	--	--	--	--	--	--	--	37	40	--	--	--	--	
ORANGE COUNTY:																			
3176	Central Orange County 1	--	--	--	--	--	49	45	40	38	37	44	35	39	36	49	40	36	
3186	Saddleback Valley 1	47	37	40	38	42	43	37	34	34	33	38	30	35	31	37	29	--	
3190	Central Orange County	56	48	49	46	46	--	--	--	--	--	--	--	--	--	--	--	--	
3812	Saddleback Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	29	28	26	
RIVERSIDE COUNTY:																			
4137	Coachella Valley 1**	--	--	33	29	45	35	43	30	27	28	27	29	26	26	29	24	27	
4144	Metropolitan Riverside County 1	96	86	90	95	94	78	76	63	72	66	69	61	65	56	72	60	63	
4149	Perris Valley	--	--	49	59	61	59	49	45	50	45	47	40	45	38	50	41	41	
4150	San Gorgonio Pass	51	41	44	42	47	35	38	34	33	35	30	34	38	28	--	--	--	
4155	Norco/Corona	45	--	--	--	--	--	--	--	53	53	54	44	50	47	55	49	--	
4157	Coachella Valley 2**	68	50	51	48	90	79	69	43	46	49	52	51	49	48	53	52	50	
4163	Temecula Valley	--	--	--	--	--	--	38	31	27	22	--	--	--	--	--	--	--	
4164	Banning Airport	--	--	--	--	--	--	--	--	--	--	--	--	--	27	35	29	35	
SAN BERNARDINO COUNTY:																			
5171	Southwest San Bernardino Valley 1	74	76	70	78	79	72	68	79	58	50	54	51	51	47	55	--	--	
5181	Central San Bernardino Mountains	--	--	--	--	39	37	39	33	31	26	20	24	24	25	27	24	--	
5197	Central San Bernardino Valley 1	74	76	74	81	77	78	63	56	57	60	61	55	54	50	60	53	51	
5203	Central San Bernardino Valley 2	--	85	70	80	81	65	61	57	56	54	57	53	51	46	57	50	52	
5204	East San Bernardino Valley	--	--	--	--	--	--	--	--	45	47	48	46	43	41	47	46	47	
5817	Southwest San Bernardino Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	66	50	52	
	District Maximum	96	86	90	95	94	79	76	79	72	66	69	61	65	56	72	60	63	

** Salton Sea Air Basin

TABLE A-11
Suspended Particulates (PM₁₀)
Annual Geometric Mean, µg/m³
1985-2001

STN#	LOCATION	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
LOS ANGELES COUNTY:																			
060	East San Gabriel Valley 1	59	54	59	56	54	48	60	40	36	38	41	39	41	36	52	43	40	
069	East San Fernando Valley	65	57	54	57	60	48	49	42	39	34	37	42	42	33	41	36	37	
072	South Coast Los Angeles County	52	51	46	47	46	41	37	37	34	37	32	31	38	29	36	33	35	
087	Central Los Angeles	66	54	51	53	56	48	51	44	43	41	36	37	39	34	42	37	40	
090	Santa Clarita Valley	--	--	--	--	49	39	43	31	28	32	31	30	31	27	35	30	29	
094	Southwest Coastal Los Angeles County	--	--	--	--	45	38	35	30	33	33	31	29	34	30	33	33	34	
108	Pomona/Walnut Valley	--	--	--	--	--	--	--	--	--	--	--	33	38	--	--	--	--	
ORANGE COUNTY:																			
3176	Central Orange County 1	--	--	--	--	--	43	40	37	34	34	36	32	36	33	43	36	34	
3186	Saddleback Valley 1	43	34	36	35	38	40	34	32	30	30	32	27	33	28	34	27	--	
3190	Central Orange County 2	52	44	42	40	42	--	--	--	--	--	--	--	--	--	--	--	--	
3812	Saddleback Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	28	26	24	
RIVERSIDE COUNTY:																			
4137	Coachella Valley 1**	--	--	24	24	36	30	37	24	24	24	24	25	24	24	26	23	24	
4144	Metropolitan Riverside County 1	81	74	73	81	81	67	65	52	58	56	52	52	56	49	65	55	54	
4149	Perris Valley	--	--	32	52	52	50	43	38	41	39	37	35	39	33	44	37	36	
4150	San Gorgonio Pass	40	33	34	34	37	29	31	29	26	27	25	27	30	24	--	--	--	
4155	Norco/Corona	--	--	--	--	--	--	--	--	44	45	45	40	44	41	49	43	39	
4157	Coachella Valley 2**	55	46	44	43	66	65	61	39	41	45	47	46	44	44	50	48	44	
4163	Temecula Valley	--	--	--	--	--	--	36	28	24	19	--	--	--	--	--	--	--	
4164	Banning Airport	--	--	--	--	--	--	--	--	--	--	--	--	--	24	30	25	27	
SAN BERNARDINO COUNTY:																			
5171	Southwest San Bernardino Valley 1	65	65	60	67	70	61	60	62	37	45	44	46	45	40	50	--	--	
5181	Central San Bernardino Mountains	--	--	--	--	36	31	35	30	25	22	18	20	21	21	24	21	--	
5197	Central San Bernardino Valley 1	63	63	58	67	68	63	58	49	46	53	51	48	48	43	54	47	44	
5203	Central San Bernardino Valley 2	--	74	55	67	69	55	52	49	48	46	48	46	46	39	51	45	45	
5204	East San Bernardino Valley	--	--	--	--	--	--	--	--	35	38	37	38	35	34	41	40	40	
5817	Southwest San Bernardino Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	59	46	46	
	District Maximum	81	74	73	81	81	67	65	62	58	56	52	52	56	49	65	55	54	

** Salton Sea Air Basin

TABLE A-12
Suspended Particulates (PM₁₀) - Percent of Sampling Days
Exceeding State Standard (50 µg/m³)
And Federal Standard (150 µg/m³),
1985-2001

STN#	LOCATION	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
LOS ANGELES COUNTY:																			
060	East San Gabriel Valley 1	68/0	61/4	64/3	67/0	59/2	50/0	68/0	39/0	32/0	40/0	40/2	41/0	40/0	28/0	58/0	42/0	38/0	
069	East San Fernando Valley	77/2	67/3	61/0	68/0	69/0	47/2	50/0	31/3	36/0	18/0	25/0	25/0	30/0	15/0	35/0	23/0	23/0	
072	South Coast Los Angeles County	58/0	40/0	33/0	40/0	44/0	24/0	24/0	19/0	20/0	18/0	19/0	15/0	18/0	10/0	22/0	21/0	17/0	
087	Central Los Angeles	85/0	66/2	62/2	57/0	57/0	52/2	54/2	36/0	43/0	33/0	23/0	18/0	25/0	17/0	33/0	25/0	33/0	
090	Santa Clarita Valley	--	--	--	--	44/0	28/0	23/0	9/0	15/0	18/0	14/0	9/0	9/0	6/0	21/0	7/0	7/0	
094	Southwest Coastal Los Angeles County	--	--	--	--	48/0	26/0	42/0	13/0	15/0	22/0	21/0	8/0	7/0	12/0	10/0	16/0	14/0	
108	Pomona/Walnut Valley	--	--	--	--	--	--	--	--	--	--	--	18/0	18/0	--	--	--	--	
ORANGE COUNTY:																			
3176	Central Orange County 1	--	--	--	--	--	34/2	24/0	20/0	21/0	18/0	23/2	10/0	18/0	20/0	39/0	13/0	20/0	
3186	Saddleback Valley 1	37/0	8/0	25/0	18/0	33/0	29/0	15/0	8/0	12/0	12/0	18/0	7/0	7/0	10/0	10/0	3/0	--	
3190	Central Orange County 2	57/0	33/0	36/2	26/0	38/0	--	--	--	--	--	--	--	--	--	--	--	--	
3812	Saddleback Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3/0	3/0	5/0	
RIVERSIDE COUNTY:																			
4137	Coachella Valley 1**	--	--	--	13/0	28/3	15/0	25/2	7/2	2/0	3/0	4/0	3/0	2/0	5/0	5/0	0/0	2/0	
4144	Metropolitan Riverside County 1	75/18	79/8	77/12	84/12	84/12	75/5	68/3	64/0	69/7	67/2	62/7	68/2	70/2	54/0	72/2	70/0	67/0	
4149	Perris Valley	--	--	33/0	63/2	66/2	53/5	43/0	41/0	45/0	43/0	38/0	33/0	32/0	26/0	50/0	22/0	27/0	
4150	San Gorgonio Pass	50/0	33/0	36/2	30/0	33/3	20/0	30/0	17/0	18/0	23/0	12/0	19/0	25/0	9/0	--	--	--	
4155	Norco/Corona	--	--	--	--	--	--	--	--	51/2	58/0	47/3	33/0	42/2	40/0	55/0	48/0	33/0	
4157	Coachella Valley 2**	67/5	45/0	41/0	36/0	67/7	70/7	63/5	31/0	41/0	38/0	44/2	50/0	43/0	40/0	54/0	50/0	45/0	
4163	Temecula Valley	--	--	--	--	--	--	21/0	4/0	3/0	0/0	--	--	--	--	--	--	--	
4164	Banning Airport	--	--	--	--	--	--	--	--	--	--	--	--	--	4/0	12/0	8/0	13/2	
SAN BERNARDINO COUNTY:																			
5171	Southwest San Bernardino Valley 1	70/2	74/9	68/2	78/3	80/7	63/7	67/2	66/3	62/0	44/0	51/5	53/0	36/2	34/0	56/0	--	--	
5181	Central San Bernardino Mountains	--	--	--	--	22/0	19/0	13/0	8/0	4/0	5/0	2/0	0/0	0/0	0/0	0/0	0/0	--	
5197	Central San Bernardino Valley 1	60/7	68/7	63/5	77/7	77/3	73/5	65/0	59/0	57/0	63/0	57/3	57/0	48/0	47/0	61/0	52/0	57/0	
5203	Central San Bernardino Valley 2	--	76/5	59/3	71/5	75/5	58/3	68/2	60/0	63/0	51/0	53/0	58/0	45/0	38/0	56/0	53/0	52/0	
5204	East San Bernardino Valley	--	--	--	--	--	--	--	--	46/0	41/0	41/2	42/0	38/0	32/0	40/0	44/0	45/0	
5817	Southwest San Bernardino Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	67/2	45/0	42/2	

** Salton Sea Air Basin

TABLE A-13
Suspended Particulates (PM₁₀)
Annual Maximum 24-Hour Average, µg/m³
1985-2001

STN#	LOCATION	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
LOS ANGELES COUNTY:																			
060	East San Gabriel Valley 1	149	183	188	127	172	127	137	107	101	127	157	100	116	87	103	94	106	
069	East San Fernando Valley	165	211	147	138	133	161	133	222	93	114	135	110	92	75	82	74	86	
072	South Coast Los Angeles County	106	136	113	149	119	119	92	67	86	97	146	113	87	69	79	105	91	
087	Central Los Angeles	146	178	158	130	137	152	151	137	104	122	141	138	102	80	88	80	97	
090	Santa Clarita Valley	--	--	--	--	100	93	81	84	75	66	87	91	67	60	75	64	62	
094	Southwest Coastal Los Angeles County	--	--	--	--	133	127	79	67	91	81	136	107	79	66	69	74	75	
108	Pomona/Walnut Valley	--	--	--	--	--	--	--	--	--	--	--	103	67	--	--	--	--	
ORANGE COUNTY:																			
3176	Central Orange County 1	--	--	--	--	--	158	146	88	92	106	172	101	91	81	122	126	93	
3186	Saddleback Valley 1	100	109	107	97	88	88	94	83	115	91	122	79	86	70	111	60	--	
3190	Central Orange County 2	144	124	163	132	138	--	--	--	--	--	--	--	--	--	--	--	--	
3812	Saddleback Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	56	98	60	
RIVERSIDE COUNTY:																			
4137	Coachella Valley 1**	--	--	121	77	292	83	197	175	58	55	68	130	63	72	104	44	53	
4144	Metropolitan Riverside County 1	208	294	219	252	252	207	179	126	231	161	219	162	163	116	153	139	136	
4149	Perris Valley	--	--	187	164	187	250	113	115	131	112	145	87	139	98	112	87	86	
4150	San Gorgonio Pass	135	135	163	113	194	89	87	89	87	96	138	122	227	76	--	--	--	
4155	Norco/Corona	--	--	--	--	--	--	--	--	164	139	177	94	158	93	136	129	109	
4157	Coachella Valley 2**	358	111	115	115	712	520	340	117	125	97	199	117	144	114	119	114	149	
4163	Temecula Valley	--	--	--	--	--	--	66	88	105	48	--	--	--	--	--	--	--	
4164	Banning Airport	--	--	--	--	--	--	--	--	--	--	--	--	--	62	86	69	219	
SAN BERNARDINO COUNTY:																			
5171	Southwest San Bernardino Valley 1	157	272	182	192	254	185	158	649	138	138	167	129	208	92	112	--	--	
5181	Central San Bernardino Mountains	--	--	--	--	87	88	105	62	73	67	53	45	47	45	47	49	--	
5197	Central San Bernardino Valley 1	154	275	203	287	227	475	127	105	143	133	178	130	122	101	116	108	106	
5203	Central San Bernardino Valley 2	--	285	211	289	271	235	163	136	139	147	148	136	108	114	134	108	106	
5204	East San Bernardino Valley	--	--	--	--	--	--	--	--	109	138	172	128	103	97	92	109	102	
5817	Southwest San Bernardino Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	124	166	
	District Maximum	358	294	219	289	712	520	340	649	231	161	219	162	227	116	153	139	219	

** Salton Sea Air Basin

TABLE A-14
Nitrogen Dioxide - Annual Average of All Hours, pphm, 1976-2001^{a)}
(To Be Compared to Federal Standard of 5.34 pphm, Annual Average of All Hours)

STN#	LOCATION	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
LOS ANGELES COUNTY:																												
060	East San Gabriel Valley 1	4.71	5.77	5.29	3.64	3.71	5.03	4.94	4.70	4.35	5.02	4.96	4.98	5.30	5.11	4.10	4.50	4.03	4.00	4.30	4.64	4.15	3.38	3.64	3.90	3.66	3.31	
069	East San Fernando Valley	6.31	6.58	7.18	6.86	7.06	7.13	6.15	5.57	5.60	5.71	5.74	5.16	5.28	5.07	4.79	4.68	5.01	4.40	4.97	4.54	4.61	4.24	4.16	4.56	4.15	4.19	
072	South Coastal Los Angeles County	6.50	6.34	5.81	6.04	4.87	5.38	5.12	4.56	4.98	4.99	5.29	4.32	4.75	4.28	3.93	4.11	3.89	3.57	3.46	3.67	3.42	3.33	3.39	3.42	3.13	3.08	
074	West San Fernando Valley	4.88	5.19	4.59	5.29	4.99	4.90	4.50	4.41	3.89	3.85	2.77	3.19	3.78	3.90	3.40	3.99	3.17	3.06	3.39	3.17	3.07	2.60	2.66	2.87	2.85	2.66	
075	Pomona/Walnut Valley 1	5.98	6.30	6.20	5.18	5.03	5.06	5.50	5.20	5.16	5.41	5.58	5.47	5.61	5.71	5.55	5.50	5.07	4.99	4.80	4.56	4.26	4.33	4.33	5.03	4.35	3.71	
076	Southwest Coastal Los Angeles County	6.36	6.08	5.49	5.75	5.79	5.90	5.27	4.44	4.61	4.32	c)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
080	Southeast Los Angeles County	6.36	6.49	6.13	6.04	5.10	5.48	5.35	5.16	4.48	4.79	5.04	4.86	4.98	4.44	4.28	3.94	3.76	3.76	--	--	--	--	--	--	--	--	--
084	South Central Los Angeles County 1	4.67	5.70	4.68	5.39	5.00	5.74	4.96	4.62	5.45	5.23	5.28	4.29	4.78	4.59	4.08	4.37	4.55	4.09	4.99	4.63	4.12	4.28	3.93	4.28	3.86	3.69	
085	South San Gabriel Valley	7.22	7.49	6.61	6.33	5.87	6.06	5.79	5.04	4.88	5.32	5.29	4.89	5.39	5.47	4.99	4.69	4.43	4.28	4.49	4.56	3.93	3.63	3.69	3.91	3.66	3.52	
087	Central Los Angeles	6.40	7.73	6.64	5.82	6.10	6.68	6.02	5.88	5.67	5.99	6.12	5.37	6.13	5.53	4.67	4.93	4.04	3.32	4.76	4.50	4.36	4.30	3.98	3.91	4.04	3.78	
088	West San Gabriel Valley	6.84	7.80	7.34	6.03	5.53	5.78	5.55	4.84	4.85	5.01	5.13	4.20	5.00	5.31	4.74	5.02	4.23	3.90	4.28	3.75	3.78	3.41	3.51	3.79	2.96	3.45	
090	Santa Clarita Valley	2.39	3.10	3.18	2.18	--	--	--	--	--	--	--	--	--	--	3.16	3.24	2.76	2.89	3.27	3.05	--	--	--	--	2.84	2.46	2.39
091	Northwest Coastal Los Angeles County	6.68	7.00	5.59	6.42	5.75	5.37	5.22	4.98	4.36	3.84	4.21	3.78	3.43	3.15	3.24	2.78	2.84	2.87	2.96	2.78	2.89	2.85	2.71	2.91	2.73	2.51	
094	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	--	4.20	3.53	3.58	3.74	3.39	2.98	3.20	3.00	3.22	3.05	2.85	2.80	2.95	2.95	2.75	2.50	
108	Pomona/Walnut Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.58	4.53	3.82	--	--	--	--	--	
591	East San Gabriel Valley 2	--	--	--	--	--	--	--	--	--	--	--	3.77	4.39	3.89	3.77	4.30	3.53	3.39	3.62	3.80	3.28	3.00	2.76	3.28	2.90	2.74	
801	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.04	2.92	--	
ORANGE COUNTY:																												
3176	Central Orange County	4.81	5.04	4.33	4.82	5.20	4.97	4.64	4.46	4.41	4.30	4.46	4.21	4.58	4.72	4.69	4.48	3.94	3.54	3.80	3.71	3.19	3.32	3.36	3.27	3.00		
3177	North Orange County	4.32	5.43	5.31	5.30	5.13	5.26	4.78	4.55	4.63	4.26	4.21	3.82	4.24	4.28	4.47	4.26	3.79	3.87	4.14	3.91	3.54	3.29	3.44	3.51	3.04		
3195	North Coastal Orange County	2.39	2.47	2.52	2.70	2.50	3.24	3.11	2.80	2.58	2.48	2.60	2.81	2.68	4.63	2.72	2.60	2.49	2.20	2.44	2.39	2.06	1.99	2.00	2.09	2.05		
RIVERSIDE COUNTY:																												
4137	Coachella Valley 1**	--	--	--	1.84	1.89	1.87	2.45	2.73	1.43	1.96	1.86	1.90	2.20	2.39	2.06	2.08	2.10	1.95	2.19	2.23	2.10	1.58	1.70	1.95	1.78	1.75	
4144	Metropolitan Riverside County	3.17	4.19	3.13	3.25	3.42	3.63	3.36	3.44	3.54	3.53	3.16	2.69	3.68	3.64	3.36	3.51	3.04	2.98	3.20	3.06	2.94	2.62	2.25	2.25	2.36	2.47	
4149	Perris Valley	--	--	--	--	--	--	--	--	--	--	--	--	3.10	3.22	2.82	--	--	--	--	--	--	--	--	--	--	--	
4157	Coachella Valley 2**	1.99	1.75	1.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.99	--	
4158	Lake Elsinore	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.12	2.08	1.82	1.65	1.74	2.00	1.75	1.85	
4164	Banning Airport	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.15	2.43	2.37	2.11	
SAN BERNARDINO COUNTY:																												
5175	Northwest San Bernardino Valley	4.07	6.10	4.42	6.11	4.88	4.90	--	4.20	4.05	3.98	4.23	4.72	4.72	4.48	4.11	4.28	3.96	4.21	4.15	4.64	3.87	3.41	3.59	3.98	3.80	3.84	
5197	Central San Bernardino Valley 1	3.53	3.40	4.25	3.39	3.90	4.24	3.68	3.36	3.78	3.73	4.18	3.83	3.69	3.63	3.43	3.77	3.44	3.72	4.03	4.24	3.86	3.65	3.62	3.88	3.64	3.58	
5203	Central San Bernardino Valley 2	2.15	2.67	2.57	3.16	4.79	4.86	4.33	3.60	4.00	3.79	4.37	4.30	4.21	4.09	3.93	3.55	3.56	3.76	4.11	4.04	3.84	3.53	3.39	3.58	3.25	3.03	
5204	East San Bernardino Valley	2.17	2.78	2.45	1.83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	District Maximum	7.22	7.80	7.34	6.86	7.06	7.13	6.15	5.88	5.67	5.99	6.12	5.47	6.13	5.71	5.55	5.50	5.07	4.99	4.99	4.64	4.61	4.33	4.33	5.03	4.35	4.19	

a) Data prior to 1980 have been multiplied by an adjustment factor of 0.877 to be made comparable to 1980-2001 data.

b) 1982 annual averages are based on the arithmetic mean of the monthly averages and may differ slightly from the annual average of all hours.

c) Station relocated in 1986.

**Salton Sea Air Basin.

TABLE A-15
Nitrogen Dioxide - Number of Days 1-Hour Average
Exceeded the State Standard (> .25 ppm), 1976-2001

STN#	LOCATION	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
LOS ANGELES COUNTY:																												
060	East San Gabriel Valley 1	1	7	8	1	1	3	3	1	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
069	East San Fernando Valley	4	12	26	11	22	9	1	4	0	1	1	1	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0
072	South Coastal Los Angeles County	25	14	4	7	4	10	3	3	5	3	1	1	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0
074	West San Fernando Valley	1	5	5	3	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
075	Pomona/Walnut Valley 1	5	7	4	2	1	4	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
076	Southwest Coastal Los Angeles County	6	16	6	6	2	8	3	3	1	0	a)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
080	Southeast Los Angeles County	7	13	8	6	4	10	4	4	2	3	1	0	0	1	0	0	0	0	--	--	--	--	--	--	--	--	--
084	South Central Los Angeles County 1	3	4	0	4	1	5	0	1	2	1	1	1	1	2	1	2	0	0	0	0	0	0	0	0	0	0	0
085	South San Gabriel Valley	10	33	14	7	6	8	2	4	0	4	1	0	0	3	2	0	1	1	0	0	0	0	0	0	0	0	0
087	Central Los Angeles	16	42	15	8	15	16	8	4	0	2	6	4	6	1	3	5	1	0	0	0	0	0	0	0	0	0	0
088	West San Gabriel Valley	12	26	15	7	11	2	1	3	0	1	0	0	2	2	0	2	0	0	0	0	0	0	0	0	0	0	0
090	Santa Clarita Valley	0	0	0	1	0	--	--	--	--	--	--	--	--	0	0	0	0	0	0	0	0	--	--	--	0	0	0
091	Northwest Coastal Los Angeles County	37	30	11	25	16	6	4	4	3	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
094	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	--	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	Pomona/Walnut Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	0	--	--	--	--	--	--
591	East San Gabriel Valley 2	--	--	--	--	--	--	--	--	--	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
801	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	--	--
ORANGE COUNTY:																												
3176	Central Orange County	7	2	1	1	15	3	0	0	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
3177	North Orange County	0	1	3	0	5	7	1	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3195	North Coastal Orange County	4	0	2	1	2	2	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIVERSIDE COUNTY:																												
4137	Coachella Valley 1**	--	--	--	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4144	Metropolitan Riverside County	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4149	Perris Valley	--	--	--	--	--	--	--	--	--	--	--	--	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--
4157	Coachella Valley 2**	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	--	
4158	Lake Elsinore	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	0	0	0	0	0	0	0	
4164	Banning Airport	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1	0	0	
SAN BERNARDINO COUNTY:																												
5175	Northwest San Bernardino Valley	0	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5197	Central San Bernardino Valley 1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5203	Central San Bernardino Valley 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5204	East San Bernardino Valley	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

a) Station relocated in 1986.

** Salton Sea Air Basin

TABLE A-16
Nitrogen Dioxide
Annual Maximum 1-Hour, ppm^{a)}
1976-2001

STN#	LOCATION	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
LOS ANGELES COUNTY:																											
060	East San Gabriel Valley 1	.27	.35	.38	.35	.27	.28	.30	.26	.16	.27	.21	.23	.24	.27	.21	.25	.15	.17	.19	.22	.15	.16	.14	.16	.15	.12
069	East San Fernando Valley	.33	.40	.44	.31	.35	.37	.26	.30	.21	.31	.28	.26	.26	.25	.23	.29	.19	.17	.18	.18	.20	.20	.14	.18	.17	.25
072	South Coastal Los Angeles County	.38	.38	.35	.41	.31	.37	.30	.37	.35	.35	.26	.26	.28	.27	.27	.28	.18	.20	.20	.21	.17	.20	.16	.15	.14	.13
074	West San Fernando Valley	.26	.35	.46	.27	.32	.24	.24	.23	.21	.21	.22	.15	.20	.18	.19	.17	.17	.15	.17	.14	.16	.20	.14	.12	.11	.09
075	Pomona/Walnut Valley 1	.28	.31	.32	.30	.27	.31	.32	.21	.20	.23	.25	.22	.20	.26	.21	.22	.18	.20	.17	.18	.18	.15	.15	.16	.14	.13
076	Southwest Coastal Los Angeles County	.34	.38	.34	.33	.38	.42	.34	.32	.27	.24	b)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
080	Southeast Los Angeles County	.46	.61	.44	.32	.47	.38	.30	.32	.29	.31	.28	.25	.22	.29	.23	.22	.21	.20	--	--	--	--	--	--	--	--
084	South Central Los Angeles County 1	.34	.29	.23	.32	.29	.32	.24	.27	.27	.31	.26	.26	.31	.34	.26	.26	.25	.23	.20	.21	.25	.20	.16	.18	.14	.15
085	South San Gabriel Valley	.46	.39	.40	.36	.54	.36	.29	.31	.25	.31	.26	.24	.24	.31	.27	.25	.27	.26	.24	.23	.17	.15	.14	.16	.14	.14
087	Central Los Angeles	.46	.53	.37	.41	.44	.45	.41	.33	.23	.27	.33	.42	.54	.28	.28	.38	.30	.21	.22	.24	.25	.20	.17	.21	.16	.14
088	West San Gabriel Valley	.33	.42	.52	.32	.35	.40	.34	.35	.21	.27	.24	.21	.27	.34	.23	.32	.22	.18	.18	.22	.19	.17	.16	.16	.17	.15
090	Santa Clarita Valley	.11	.29	.18	.25	.10	--	--	--	--	--	--	--	--	.13	.15	.17	.11	.13	.12	.16	--	--	--	.10	.10	.10
091	Northwest Coastal Los Angeles County	.40	.49	.49	.40	.37	.40	.39	.47	.32	.23	.24	.27	.26	.22	.20	.25	.17	.17	.16	.20	.18	.14	.13	.13	.16	.11
094	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	--	.23	.23	.27	.24	.23	.21	.19	.16	.22	.18	.15	.17	.15	.13	.13	.11
108	Pomona/Walnut Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	.22	.21	.18	--	--	--	--	--
591	East San Gabriel Valley 2	--	--	--	--	--	--	--	--	--	--	.13	.17	.20	.22	.19	.23	.16	.16	.19	.20	.14	.13	.13	.14	.13	.12
801	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	.16	.11	--
ORANGE COUNTY:																											
3176	Central Orange County	.40	.25	.26	.29	.43	.30	.20	.24	.24	.28	.21	.22	.28	.28	.21	.20	.21	.20	.19	.18	.15	.10	.13	.12	.13	.12
3177	North Orange County	.25	.34	.33	.21	.42	.36	.28	.33	.25	.30	.20	.22	.24	.23	.22	.20	.17	.18	.23	.20	.16	.15	.13	.16	.12	.13
3195	North Coastal Orange County	.30	.20	.26	.25	.31	.29	.23	.27	.22	.24	.20	.19	.26	.22	.22	.16	.15	.14	.16	.18	.14	.12	.12	.12	.11	.08
RIVERSIDE COUNTY:																											
4137	Coachella Valley 1**	--	--	--	.09	.13	.09	.15	.16	.09	.08	.08	.08	.11	.09	.09	.09	.09	.15	.08	.09	.08	.07	.07	.07	.07	.08
4144	Metropolitan Riverside County	.20	.24	.19	.18	.20	.32	.16	.19	.17	.16	.16	.21	.19	.16	.16	.16	.23	.14	.18	.15	.11	.12	.10	.13	.10	.15
4149	Perris Valley	--	--	--	--	--	--	--	--	--	--	--	--	.14	.14	.11	--	--	--	--	--	--	--	--	--	--	--
4157	Coachella Valley 2**	.08	.13	.11	.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	.06	--
4158	Lake Elsinore	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	.11	.21	.10	.11	.09	.11	.08	.09
4164	Banning Airport	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	.26	.31	.21	.24
SAN BERNARDINO COUNTY:																											
5175	Northwest San Bernardino Valley	.11	.26	.24	.26	.35	.19	.20	.25	.15	.18	.24	.20	.21	.20	.19	.21	.14	.16	.17	.20	.15	.15	.14	.13	.15	.13
5197	Central San Bernardino Valley 1	.26	.20	.26	.16	.25	.19	.18	.16	.16	.14	.18	.18	.21	.18	.20	.19	.14	.16	.18	.17	.17	.14	.15	.15	.12	.13
5203	Central San Bernardino Valley 2	.11	.17	.12	.20	.25	.20	.19	.19	.20	.15	.18	.19	.19	.18	.20	.16	.13	.15	.16	.16	.15	.14	.11	.14	.10	.11
5204	East San Bernardino Valley	.22	.21	.18	.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	District Maximum	.46	.61	.52	.41	.54	.45	.41	.47	.35	.35	.33	.42	.54	.34	.28	.38	.30	.26	.22	.24	.25	.20	.26	.31	.21	.25

a) Data prior to 1980 have been multiplied by an adjustment factor of 0.877 to be made comparable to 1980-2001 data.

b) Station relocated in 1986.

** Salton Sea Air Basin

TABLE A-17
Sulfur Dioxide - Annual Average, pphm
1976-2001

STN#	LOCATION	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001		
LOS ANGELES COUNTY:																													
060	East San Gabriel Valley 1	1.02	1.03	0.75	0.71	0.62	0.32	0.31	0.21	0.23	0.29	0.30	0.24	0.22	0.17	0.11	--	--	--	--	--	--	--	--	--	--	--	--	
069	East San Fernando Valley	0.81	1.37	1.07	1.04	0.67	0.52	0.58	0.47	0.52	0.51	0.34	0.30	0.22	0.20	0.18	0.09	0.10	0.12	0.07	0.01	0.04	0.03	0.02	0.01	0.01	0.01	0.07	
072	South Coastal Los Angeles County	1.51	1.45	1.33	0.90	1.08	0.95	1.07	0.89	0.98	0.81	0.84	0.58	0.68	0.46	0.31	0.43	0.37	0.36	0.31	0.23	0.25	0.24	0.18	0.27	0.15	0.22		
074	West San Fernando Valley	0.77	0.95	0.47	0.33	0.48	0.44	0.45	0.43	0.41	0.25	0.33	0.26	0.17	0.18	0.15	--	--	--	--	--	--	--	--	--	--	--	--	
075	Pomona/Walnut Valley 1	1.02	1.41	1.16	0.60	0.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
076	Southwest Coastal Los Angeles County	1.70	1.78	0.64	0.81	1.14	1.05	1.06	0.95	1.04	0.74	a)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
080	Southeast Los Angeles County	1.88	1.73	1.30	2.33	0.99	0.70	0.80	0.58	0.60	0.43	0.43	0.42	0.55	0.36	0.16	0.16	0.08	0.07	--	--	--	--	--	--	--	--	--	
084	South Central Los Angeles County 1	1.22	1.04	0.84	0.64	0.82	0.91	0.70	0.66	0.84	0.70	0.51	0.59	0.69	0.42	0.33	0.30	0.31	0.23	0.26	0.30	--	--	--	--	--	--	--	
085	South San Gabriel Valley	0.77	0.80	0.63	0.76	0.55	0.55	0.54	0.56	0.70	0.50	0.34	0.36	0.48	0.45	0.43	--	--	--	--	--	--	--	--	--	--	--	--	--
087	Central Los Angeles	1.94	2.01	1.74	1.16	1.28	0.71	0.79	0.61	0.85	0.53	0.42	0.43	0.41	0.22	0.17	0.17	0.15	0.03	0.07	0.10	0.15	0.07	0.08	0.23	0.09	0.28		
088	West San Gabriel Valley	1.52	1.53	1.48	1.05	0.61	0.38	0.47	0.35	0.33	0.25	0.19	0.28	0.23	0.22	0.15	--	--	--	--	--	--	--	--	--	--	--	--	
090	Santa Clarita Valley	1.12	1.11	0.93	0.90	0.49	--	--	--	--	--	--	--	--	0.09	0.09	--	--	--	--	--	--	--	--	--	--	--	--	
091	Northwest Coastal Los Angeles County	0.79	0.87	1.12	0.88	0.66	0.40	0.28	0.23	0.27	0.32	0.33	0.28	0.22	0.24	0.21	--	--	--	--	--	--	--	--	--	--	--	--	
094	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	--	0.50	0.38	0.48	0.47	0.35	0.40	0.57	0.31	0.22	0.27	0.25	0.14	0.39	0.40	0.17	0.41		
ORANGE COUNTY:																													
3176	Central Orange County 1	0.67	0.62	0.45	0.63	0.67	0.41	0.56	0.50	0.60	0.32	0.32	0.30	0.41	0.31	0.18	--	--	--	--	--	--	--	--	--	--	--	--	
3177	North Orange County	0.61	0.75	0.73	0.6	0.8	0.53	0.51	0.55	0.6	0.51	0.5	0.49	0.38	0.21	0.11	0.12	0.06	0.06	0.09	0.09	--	--	--	--	--	--	--	
3186	Saddleback Valley	0.12	0.14	0.14	0.18	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3190	Central Orange County 2	0.96	0.88	0.66	0.76	0.90	0.46	0.45	0.36	0.40	0.30	0.27	0.30	0.29	0.27	0.19	0.11	0.11	0.08	--	--	--	--	--	--	--	--	--	
3195	North Coastal Orange County	0.63	0.59	0.42	0.42	0.54	0.34	0.35	0.25	0.29	0.28	0.15	0.20	0.18	0.15	0.07	0.07	0.06	0.05	0.07	0.07	0.01	0.03	0.04	0.07	0.05	0.15		
RIVERSIDE COUNTY:																													
4137	Coachella Valley 1**	--	--	--	0.65	0.54	0.07	0.01	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4144	Metropolitan Riverside County	0.50	1.00	0.89	0.93	0.40	0.13	0.17	0.14	0.00	0.14	0.07	0.22	0.14	0.07	0.03	0.02	0.02	0.03	0.02	0.01	0.01	0.03	0.11	0.14	0.08	0.09		
4157	Coachella Valley 2**	--	0.01	0.74	0.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SAN BERNARDINO COUNTY:																													
5175	Northwest San Bernardino Valley	--	--	0.75	0.85	0.49	0.51	0.65	0.25	0.16	0.08	0.07	0.14	0.17	0.14	0.12	--	--	--	--	--	--	--	--	--	--	--	--	
5197	Central San Bernardino Valley 1	2.71	2.60	0.98	0.85	0.53	0.47	0.51	0.21	0.11	0.10	0.14	0.18	0.16	0.05	0.01	0.05	0.12	0.00	0.02	0.06	0.01	0.00	0.07	0.18	0.18	0.21		
5203	Central San Bernardino Valley 2	0.82	1.50	1.15	1.00	0.21	0.09	0.15	0.10	0.21	0.17	0.34	0.26	0.18	0.06	0.01	--	--	--	--	--	--	--	--	--	--	--	--	
	District Maximum	2.71	2.60	1.74	2.33	1.28	1.05	1.07	0.95	1.04	0.81	0.84	0.59	0.69	0.47	0.43	0.43	0.57	0.36	0.31	0.30	0.25	0.24	0.39	0.40	0.18	0.41		

a) Station relocated in 1986.

** Salton Sea Air Basin

TABLE A-18
Sulfur Dioxide
Annual Maximum 1-Hour Average, ppm
1976-2001

STN#	LOCATION	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
LOS ANGELES COUNTY:																												
60	East San Gabriel Valley	.10	.06	.05	.06	.05	.04	.06	.03	.04	.02	.03	.03	.03	.02	.03	--	--	--	--	--	--	--	--	--	--	--	--
69	East San Fernando Valley	.09	.10	.06	.06	.04	.04	.09	.04	.05	.04	.02	.03	.02	.03	.02	.01	.03	.02	.03	.01	.01	.04	.01	.01	.01	.01	.01
72	South Coastal Los Angeles County	.13	.13	.19	.13	.10	.14	.09	.12	.32	.08	.07	.06	.05	.11	.05	.14	.11	.05	.04	.14	.04	.04	.08	.05	.05	.05	
74	West San Fernando Valley	.04	.06	.05	.03	.03	.03	.03	.03	.03	.02	.02	.02	.02	.02	.02	--	--	--	--	--	--	--	--	--	--	--	
75	Pomona/Walnut Valley	.06	.08	.06	.05	.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
76	Southwest Coastal Los Angeles County	.18	.30	.09	.10	.08	.07	.08	.09	.06	.06	a)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
80	Southeast Los Angeles County	.15	.18	.10	.14	.16	.09	.09	.09	.06	.05	.06	.07	.10	.04	.04	.07	.03	.03	--	--	--	--	--	--	--	--	
84	South Central Los Angeles County	.09	.12	.13	.09	.08	.09	.06	.06	.07	.06	.13	.06	.06	.04	.04	.05	.06	.03	.02	.03	--	--	--	--	--	--	
85	South San Gabriel Valley	.05	.08	.05	.10	.07	.05	.05	.08	.09	.07	.03	.09	.05	.04	.04	--	--	--	--	--	--	--	--	--	--	--	
87	Central Los Angeles	.12	.09	.09	.05	.06	.05	.05	.07	.07	.04	.03	.03	.04	.03	.02	.02	.05	.01	.02	.01	.01	.02	.14	.05	.08	.03	
88	West San Gabriel Valley	.06	.07	.06	.06	.05	.04	.04	.05	.03	.03	.02	.02	.03	.02	.02	--	--	--	--	--	--	--	--	--	--	--	
90	Santa Clarita Valley	.10	.04	.05	.05	.03	--	--	--	--	--	--	--	--	.02	.01	--	--	--	--	--	--	--	--	--	--	--	
91	Northwest Coastal Los Angeles County	.07	.05	.08	.04	.04	.04	.03	.06	.05	.03	.02	.03	.03	.02	.02	--	--	--	--	--	--	--	--	--	--	--	
94	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	--	.09	.03	.15	.09	.31	.12	.15	.07	.04	.06	.06	.10	.03	.09	.17	.04	
ORANGE COUNTY:																												
3176	Central Orange County 1	.11	.09	.07	.07	.08	.04	.04	.05	.08	.03	.03	.09	.06	.03	.02	--	--	--	--	--	--	--	--	--	--	--	
3177	North Orange County	.11	.12	.10	.09	.09	.04	.04	.05	.04	.05	.06	.05	.05	.03	.03	.04	.02	.02	.02	.02	--	--	--	--	--	--	
3186	Saddleback Valley	.05	.07	.10	.09	.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3190	Central Orange County 2	.25	.14	.16	.11	.14	.06	.08	.05	.06	.02	.03	.04	.04	.07	.03	.03	.10	.02	--	--	--	--	--	--	--	--	
3195	North Coastal Orange County	.13	.10	.07	.07	.06	.08	.06	.04	.04	.05	.02	.03	.03	.03	.02	.04	.02	.01	.02	.02	.01	.03	.02	.02	.02	.01	
RIVERSIDE COUNTY:																												
4137	Coachella Valley 1**	--	--	--	.03	.03	.01	.01	.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4144	Metropolitan Riverside County	.08	.12	.08	.08	.07	.02	.02	.02	.02	.02	.02	.04	.02	.02	.03	.02	.02	.02	.02	.01	.01	.04	.03	.03	.11	.02	
4157	Coachella Valley 2**	--	.02	.04	.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SAN BERNARDINO COUNTY:																												
5175	Northwest San Bernardino Valley	--	--	.10	.08	.07	.04	.05	.03	.02	.02	.01	.03	.03	.03	.01	--	--	--	--	--	--	--	--	--	--	--	
5197	Central San Bernardino Valley 1	.25	.40	.12	.14	.11	.11	.14	.06	.03	.02	.02	.03	.04	.03	.01	.05	.02	.01	.03	.02	.01	.01	.02	.01	.02	.01	
5203	Central San Bernardino Valley 2	.07	.35	.09	.08	.03	.02	.02	.02	.03	.02	.05	.07	.02	.03	.01	--	--	--	--	--	--	--	--	--	--	--	
	District Maximum	.25	.40	.19	.14	.16	.14	.14	.12	.32	.08	.13	.09	.15	.11	.31	.14	.15	.07	.04	.14	.06	.10	.14	.09	.17	.05	

a) Station relocated in 1986.

** Salton Sea Air Basin

TABLE A-19
Sulfate - Percent of Sampling Days Exceeding the State Standard
(≥ 25 µg/m³, 24-hour Average)
1976-2001^{a)}

STN#	LOCATION	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
LOS ANGELES COUNTY:																												
60	East San Gabriel Valley	5	11	8	0	6	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	East San Fernando Valley	--	--	--	--	--	--	--	--	0	0	0	0	0	0	2	0	0	0	0	0	--	--	--	--	--	--	--
72	South Coastal Los Angeles County	--	--	--	--	10	2	2	2	0	2	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0
74	West San Fernando Valley	2	5	7	0	5	0	5	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
75	Pomona/Walnut Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
76	Southwest Coastal Los Angeles County	11	14	6	5	11	2	3	0	2	0	b)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
80	Southeast Los Angeles County	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
84	South Central Los Angeles County	5	13	7	8	12	0	3	2	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
85	South San Gabriel Valley	--	13	8	5	12	2	3	2	0	0	0	0	2	2	0	0	0	0	2	0	0	0	0	0	2	0	0
87	Central Los Angeles	7	13	7	3	8	0	4	2	2	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
88	West San Gabriel Valley	8	11	8	2	7	2	4	2	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
90	Santa Clarita Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
91	Northwest Coastal Los Angeles County	0	2	9	0	5	2	4	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
94	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	--	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
ORANGE COUNTY:																												
3176	Central Orange County 1	5	5	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	--	--	--	--	--
3177	North Orange County	2	5	8	3	8	2	2	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3186	Saddleback Valley	--	3	2	0	0	0	0	0	0	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--
3190	Central Orange County 2	3	7	5	2	4	2	0	2	0	0	0	0	2	0	0	0	0	0	--	--	--	--	--	--	--	--	--
3195	North Coastal Orange County	2	5	3	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RIVERSIDE COUNTY:																												
4137	Coachella Valley 1**	--	--	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--
4144	Metropolitan Riverside County 1	4	2	8	5	5	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
4146	Metropolitan Riverside County 2	--	--	--	--	--	--	--	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4149	Perris Valley	--	--	--	--	--	--	--	0	0	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--
4150	San Geronio Pass	--	--	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--
4155	Norco/Corona	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4157	Coachella Valley 2**	--	--	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--
SAN BERNARDINO COUNTY:																												
5171	Southwest San Bernardino Valley	--	--	--	--	--	--	--	2	4	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--
5175	Northwest San Bernardino Valley	6	2	7	--	8	2	--	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5181	Central San Bernardino Mountains	--	--	0	0	2	0	0	0	0	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--
5197	Central San Bernardino Valley 1	4	2	16	13	6	7	5	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5203	Central San Bernardino Valley 2	3	2	8	8	10	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5204	East San Bernardino Valley	0	0	5	0	5	2	2	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

a) Data from 1982 onward are based on new filter type.

b) Station relocated in 1986.

** Salton Sea Air Basin

TABLE A-20
Sulfate - Maximum 24-Hour Averages, 1976-2001^{a)}
(To Be Compared to State Standard of 25 µg/m³, 24-Hour Average)

STN#	LOCATION	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
LOS ANGELES COUNTY:																												
60	East San Gabriel Valley	29.8	38.3	36.7	24.5	38.2	23.0	26.2	25.8	27.6	15.4	14.6	15.4	23.6	16.9	16.0	19.2	16.8	19.1	17.5	12.9	17.1	12.7	10.2	17.8	17.2	14.1	
69	East San Fernando Valley	--	--	--	--	--	--	--	--	--	21.6	19.1	17.5	33.6	22.1	25.9	18.6	12.9	20.1	18.3	13.7	--	--	--	--	--	--	
72	South Coastal Los Angeles County	--	--	--	--	40.7	32.7	30.4	30.8	22.2	31.0	25.2	17.6	27.8	20.0	22.6	19.9	22.6	15.6	17.1	16.9	19.9	11.4	14.5	13.7	26.7	15.9	
74	West San Fernando Valley	30.2	27.3	57.8	22.9	35.6	24.1	29.2	22.5	22.9	19.0	11.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
75	Pomona/Walnut Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
76	Southwest Coastal Los Angeles County	37.2	43.6	44.4	36.1	34.0	26.2	37.3	24.8	26.7	24.4	b)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
80	Southeast Los Angeles County	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
84	South Central Los Angeles County	42.4	38.0	38.1	28.1	34.2	24.0	36.8	27.6	24.9	24.0	22.4	18.2	27.1	19.6	28.1	22.4	18.7	13.7	23.1	18.8	16.0	11.4	12.0	15.6	11.4	15.4	
85	South San Gabriel Valley	--	40.8	47.2	30.6	34.3	27.1	30.8	34.8	20.6	19.2	22.1	17.8	28.1	32.0	21.1	21.6	17.0	15.5	26.2	16.3	13.7	13.1	12.0	25.6	13.1	14.5	
87	Central Los Angeles	34.4	47.2	45.0	29.7	32.8	23.7	27.7	25.7	27.4	20.0	20.4	14.5	26.6	23.0	25.3	23.1	19.4	17.6	21.7	15.5	12.8	14.3	10.6	17.9	16.4	15.9	
88	West San Gabriel Valley	33.8	38.2	53.4	26.4	38.4	27.8	26.6	26.8	25.4	20.9	15.6	14.0	24.4	18.0	28.4	20.1	11.5	18.8	14.5	13.2	12.0	11.6	9.2	16.4	13.9	13.4	
90	Santa Clarita Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
91	Northwest Coastal Los Angeles County	22.6	28.7	41.2	23.5	34.9	25.3	26.0	20.0	26.4	22.5	16.9	15.2	17.4	19.6	24.8	20.9	12.3	18.1	26.8	13.3	12.2	14.0	11.2	13.9	14.1	15.6	
94	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	--	25.2	20.6	19.0	22.6	24.8	24.7	17.6	20.5	26.7	20.4	18.4	14.4	13.5	18.8	16.2	20.6	
ORANGE COUNTY:																												
3176	Central Orange County 1	29.3	37.7	30.7	24.4	37.2	24.7	22.6	24.4	20.1	19.4	18.5	14.6	23.1	17.7	18.3	20.6	16.0	15.3	14.5	12.8	--	--	--	--	--	--	--
3177	North Orange County	26.0	34.5	34.7	26.2	35.0	25.6	28.8	19.7	21.9	22.8	10.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3186	Saddleback Valley	22.6	32.9	26.7	21.5	21.2	20.0	13.4	21.2	14.9	21.2	14.9	14.3	16.2	16.5	13.4	--	--	--	--	--	--	--	--	--	--	--	--
3190	Central Orange County 2	35.9	37.0	31.0	26.6	34.6	26.0	24.5	26.3	19.5	22.4	23.6	18.2	27.3	17.4	16.8	16.9	16.0	14.7	--	--	--	--	--	--	--	--	--
3195	North Coastal Orange County	28.2	37.8	27.2	24.2	13.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RIVERSIDE COUNTY:																												
4137	Coachella Valley 1**	16.7	12.1	13.9	12.0	11.9	12.8	11.4	13.3	8.9	9.1	8.8	10.4	11.2	12.1	5.6	--	--	--	--	--	--	--	--	--	--	--	--
4144	Metropolitan Riverside County 1	44.3	33.4	55.9	28.1	39.2	30.4	23.1	27.7	22.8	21.0	18.4	16.1	23.6	16.9	19.9	14.8	12.3	13.7	20.4	26.3	14.9	13.1	10.1	10.7	11.0	10.7	
4146	Metropolitan Riverside County 2	--	--	--	--	--	--	--	27.5	22.6	21.1	18.5	19.7	19.0	16.6	19.3	12.8	12.1	15.1	15.7	22.9	17.0	10.4	12.8	10.6	10.2	9.2	
4149	Perris Valley	--	--	--	--	--	--	--	17.9	15.9	14.1	14.0	15.6	11.5	15.9	12.9	--	--	--	--	--	--	--	--	--	--	--	
4150	San Gorgonio Pass	31.6	15.6	20.7	20.0	18.5	19.6	22.9	20.1	22.2	12.3	11.3	15.2	10.6	13.8	8.6	--	--	--	--	--	--	--	--	--	--	--	
4155	Norco/Corona	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4157	Coachella Valley 2**	19.9	10.6	11.4	13.9	16.9	13.5	11.7	12.3	11.7	8.4	7.9	10.3	8.4	18.3	7.0	--	--	--	--	--	--	--	--	--	--	--	
SAN BERNARDINO COUNTY:																												
5171	Southwest San Bernardino Valley	48.6	29.4	30.0	--	--	--	--	27.2	28.3	18.5	19.8	17.8	21.1	16.4	19.9	--	--	--	--	--	--	--	--	--	--	--	--
5175	Northwest San Bernardino Valley	34.0	64.7	37.0	32.0	--	--	--	25.5	22.6	15.3	15.7	18.0	18.5	13.9	18.7	19.0	13.2	17.1	15.8	12.5	13.6	9.7	10.5	11.7	11.5	10.7	
5181	Central San Bernardino Mountains	8.2	13.2	9.8	13.9	37.3	14.2	13.3	10.3	10.3	7.1	8.0	13.1	13.4	10.2	6.6	--	--	--	--	--	--	--	--	--	--	--	--
5197	Central San Bernardino Valley 1	32.7	30.2	51.7	32.8	40.0	42.4	32.5	33.1	23.8	16.4	18.1	18.7	28.1	14.9	18.3	20.2	13.4	16.7	15.5	13.4	13.6	10.2	10.1	12.4	10.7	10.7	
5203	Central San Bernardino Valley 2	27.5	28.5	47.1	31.7	42.8	38.8	29.6	27.1	23.4	19.4	17.8	17.6	15.8	17.8	17.3	18.3	12.9	17.2	14.9	12.5	11.2	9.1	11.5	10.9	12.4	12.4	
5204	East San Bernardino Valley	21.5	23.7	32.7	23.7	37.3	31.0	28.5	24.1	21.0	16.2	9.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	District Maximum	48.6	64.7	57.8	36.1	42.8	42.4	37.3	34.8	28.3	31	25.2	20.6	33.6	32	28.4	24.7	22.6	20.5	26.8	26.3	19.9	14.4	14.5	25.6	26.7	20.6	

a) Data from 1982 onward are based on new filter type.

b) Station relocated in 1986.

** Salton Sea Air Basin

TABLE A-21
Lead - Highest Calendar Quarter Mean, $\mu\text{g}/\text{m}^3$
(To Be Compared to Federal Standard of 1.5 $\mu\text{g}/\text{m}^3$, Calendar Quarter Average)
1976-2001

STN#	LOCATION	1976	1977	1978	1979	198	1981	1982	1983	1984	1985	1986	1987	1988	1989	199	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001		
LOS ANGELES COUNTY:																													
60	East San Gabriel Valley	1.96	2.68	1.44	1.08	0.91	0.74	0.69	0.50	0.43	0.21	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
69	East San Fernando Valley	--	--	--	--	--	--	--	--	0.65	0.49	0.33	0.20	0.20	0.10	0.07	0.07	0.09	0.05	0.05	0.04	--	--	--	--	--	--	--	--
72	South Coastal Los Angeles County	--	--	--	--	--	1.12	0.92	0.70	0.69	0.36	0.31	0.22	0.15	0.08	0.07	0.07	0.05	0.05	0.04	0.04	0.08	0.03	0.04	0.05	0.04	0.04	0.04	
74	West San Fernando Valley	3.37	3.40	2.42	1.73	1.68	0.97	0.79	0.67	0.55	0.27	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
75	Pomona/Walnut Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
76	Southwest Coastal Los Angeles County	7.52	5.34	4.06	3.21	2.55	1.57	1.63	1.03	1.02	0.60	a)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
80	Southeast Los Angeles County	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
84	South Central Los Angeles County	5.30	4.59	3.27	2.98	2.15	1.40	1.36	1.03	1.02	0.63	0.44	0.24	0.19	0.11	0.11	0.10	0.08	0.06	0.07	0.06	0.05	0.07	0.04	0.09	0.06	0.12	0.05	
85	South San Gabriel Valley	--	5.52	2.77	2.00	1.96	1.27	1.12	0.86	0.72	0.49	0.40	0.26	0.22	0.12	0.11	0.14	0.10	0.11	0.08	0.06	0.06	0.06	0.05	0.09	0.06	0.05	0.05	
87	Central Los Angeles	3.76	4.46	2.38	2.69	2.04	1.30	1.04	0.80	0.72	0.47	0.28	0.18	0.14	0.12	0.09	0.14	0.11	0.07	0.07	0.06	0.06	0.07	0.04	0.07	0.05	0.05	0.05	
88	West San Gabriel Valley	4.49	4.37	3.01	2.28	1.65	1.08	0.73	0.56	0.56	0.29	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
90	Santa Clarita Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
91	Northwest Coastal Los Angeles County	2.17	2.14	2.00	1.81	1.68	1.28	0.89	0.60	0.58	0.26	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
94	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	--	0.25	0.17	0.11	0.07	0.06	0.06	0.05	0.04	0.04	0.04	0.03	0.05	0.04	0.04	0.05	0.04	0.04	
ORANGE COUNTY:																													
3176	Central Orange County 1	3.49	3.28	2.00	1.60	1.44	0.90	0.75	0.54	0.56	0.27	0.20	0.13	0.09	0.08	0.06	0.06	0.03	0.04	0.03	0.04	--	--	--	--	--	--	--	
3177	North Orange County	3.46	3.20	2.11	1.67	1.34	0.97	0.88	0.59	0.58	0.33	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3186	Saddleback Valley	--	1.58	0.85	0.65	0.60	0.41	0.32	0.27	0.24	0.15	0.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3190	Central Orange County 2	4.57	3.25	2.70	2.08	1.52	0.85	0.97	0.55	0.60	0.31	0.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3195	North Coastal Orange County	3.39	2.66	2.00	1.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
RIVERSIDE COUNTY:																													
4137	Coachella Valley 1**	--	--	0.47	0.34	0.25	0.21	0.13	0.12	0.14	0.10	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4144	Metropolitan Riverside County 1	2.31	1.95	1.53	1.18	0.84	0.64	0.46	0.41	0.40	0.21	0.16	0.12	0.07	0.05	0.05	0.05	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.03	
4146	Metropolitan Riverside County 2	--	--	--	--	--	--	0.54	0.55	0.30	0.21	0.14	0.09	0.06	0.05	0.06	0.03	0.04	0.03	0.03	0.03	0.03	0.04	0.05	0.04	0.03	0.03		
4149	Perris Valley	--	--	--	--	--	--	0.25	0.26	0.13	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4150	San Geronio Pass	--	--	0.50	0.49	0.27	0.23	0.17	0.18	0.09	0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4155	Norco/Corona	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4157	Coachella Valley 2**	--	--	0.50	0.36	0.28	0.22	0.13	0.17	0.20	0.14	0.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SAN BERNARDINO COUNTY:																													
5171	Southwest San Bernardino Valley	--	--	--	--	--	--	0.36	0.50	0.26	0.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5175	Northwest San Bernardino Valley	2.07	1.84	1.35	1.09	--	--	0.47	0.36	0.23	0.17	0.11	0.07	0.08	0.05	0.07	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.04	
5181	Central San Bernardino Mountains	--	1.02	--	0.35	0.26	0.19	0.15	0.13	0.13	0.07	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5197	Central San Bernardino Valley 1	1.40	1.53	0.99	0.87	0.60	0.46	0.46	0.35	0.27	0.17	0.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5203	Central San Bernardino Valley 2	1.87	1.41	2.47	1.22	1.04	0.73	0.51	0.41	0.37	0.20	0.19	0.13	0.08	0.07	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.05	0.05	0.04		
5204	East San Bernardino Valley	1.33	1.80	1.06	0.66	0.45	0.36	0.32	0.27	0.22	0.15	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
District Maximum		7.52	5.52	4.06	3.21	2.55	1.57	1.63	1.03	1.02	0.63	0.44	0.26	0.22	0.12	0.11	0.14	0.11	0.11	0.08	0.06	0.08	0.07	0.05	0.09	0.06	0.12		

a) Station relocated in 1986.

** Salton Sea Air Basin

TABLE A-22
Lead - Highest Monthly Averages, $\mu\text{g}/\text{m}^3$
(To Be Compared to State Standard of 1.5 $\mu\text{g}/\text{m}^3$, Monthly Average)
1976-2001

STN#	LOCATION	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
LOS ANGELES COUNTY:																												
60	East San Gabriel Valley	2.27	3.06	1.59	1.48	1.45	0.92	0.72	0.55	0.45	0.25	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
69	East San Fernando Valley	--	--	--	--	--	--	--	--	0.90	0.60	0.41	0.29	0.35	0.20	0.08	0.10	0.16	0.05	0.06	0.05	--	--	--	--	--	--	--
72	South Coastal Los Angeles County	--	--	--	--	2.01	1.22	1.09	1.08	0.94	0.52	0.43	0.33	0.21	0.11	0.09	0.08	0.07	0.06	0.06	0.05	0.08	0.05	0.07	0.06	0.05	0.05	0.05
74	West San Fernando Valley	3.96	4.50	3.05	2.24	1.71	1.62	1.01	0.96	0.68	0.32	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
75	Pomona/Walnut Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
76	Southwest Coastal Los Angeles County	10.04	6.77	5.48	3.91	3.44	1.91	1.70	1.29	1.38	0.90	a)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
80	Southeast Los Angeles County	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
84	South Central Los Angeles County	8.13	5.74	4.42	3.67	3.02	1.83	1.55	1.36	1.43	0.91	0.58	0.32	0.31	0.15	0.14	0.17	0.11	0.08	0.09	0.07	0.09	0.07	0.04	0.17	0.09	0.23	0.09
85	South San Gabriel Valley	--	6.68	4.02	2.24	2.34	1.59	1.18	1.14	0.93	0.65	0.57	0.31	0.29	0.19	0.13	0.19	0.15	0.15	0.10	0.07	0.09	0.08	0.07	0.21	0.09	0.07	
87	Central Los Angeles	4.90	5.06	2.71	2.82	2.68	1.75	1.05	1.04	0.89	0.61	0.42	0.23	0.22	0.17	0.09	0.21	0.16	0.10	0.11	0.07	0.08	0.07	0.06	0.13	0.06	0.06	0.06
88	West San Gabriel Valley	5.61	4.73	4.16	2.54	1.72	1.43	0.90	0.84	0.73	0.38	0.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
90	Santa Clarita Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
91	Northwest Coastal Los Angeles County	2.98	2.63	2.90	2.17	2.02	1.83	1.00	0.82	0.78	0.33	0.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
94	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	--	0.35	0.26	0.18	0.13	0.08	0.08	0.05	0.05	0.05	0.04	0.04	0.06	0.06	0.05	0.08	0.04	0.04
ORANGE COUNTY:																												
3176	Central Orange County 1	4.62	4.60	2.96	1.90	2.05	1.13	0.78	0.72	0.65	0.32	0.27	0.14	0.11	0.15	0.10	0.08	0.05	0.07	0.06	0.04	--	--	--	--	--	--	--
3177	North Orange County	4.55	4.07	3.20	1.89	1.72	1.31	0.96	0.95	0.71	0.44	0.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3186	Saddleback Valley	2.11	2.66	1.36	0.72	0.69	0.61	0.36	0.32	0.31	0.20	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3190	Central Orange County 2	6.38	4.68	4.04	2.71	1.88	1.14	1.08	0.93	0.86	0.39	0.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3195	North Coastal Orange County	4.16	3.63	3.11	1.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RIVERSIDE COUNTY:																												
4137	Coachella Valley 1**	--	--	0.73	0.44	0.35	0.31	0.18	0.16	0.17	0.13	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4144	Metropolitan Riverside County 1	2.94	2.45	1.80	1.30	1.07	0.85	0.55	0.57	0.54	0.27	0.17	0.14	0.10	0.07	0.08	0.06	0.03	0.05	0.06	0.04	0.088	0.07	0.08	0.06	0.06	0.04	0.04
4146	Metropolitan Riverside County 2	4.37	3.90	--	--	--	--	0.77	0.65	0.37	0.24	0.18	0.12	0.07	0.08	0.08	0.03	0.04	0.04	0.05	0.05	0.07	0.10	0.05	0.04	0.03	0.03	0.03
4149	Perris Valley	--	--	--	--	--	--	0.28	0.31	0.18	0.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4150	San Gorgonio Pass	--	--	0.59	0.61	0.31	0.27	0.27	0.24	0.21	0.10	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4155	Norco/Corona	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4157	Coachella Valley 2**	--	--	0.63	0.52	0.36	0.40	0.16	0.24	0.24	0.19	0.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SAN BERNARDINO COUNTY:																												
5171	Southwest San Bernardino Valley	5.30	--	--	--	--	--	--	0.44	0.67	0.36	0.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5175	Northwest San Bernardino Valley	2.60	2.47	1.68	1.43	--	--	--	0.54	0.43	0.26	0.20	0.13	0.10	0.11	0.07	0.08	0.04	0.05	0.05	0.06	0.04	0.04	0.05	0.07	0.07	0.05	0.05
5181	Central San Bernardino Mountains	0.30	0.78	0.36	0.48	0.31	0.29	0.18	0.17	0.14	0.12	0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5197	Central San Bernardino Valley 1	2.10	3.15	1.19	1.20	0.86	0.52	0.53	0.39	0.34	0.22	0.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5203	Central San Bernardino Valley 2	2.40	1.83	3.33	1.49	1.30	1.01	0.62	0.52	0.47	0.31	0.23	0.15	0.12	0.09	0.07	0.06	0.05	0.05	0.04	0.05	0.06	0.04	0.05	0.07	0.06	0.05	0.05
5204	East San Bernardino Valley	1.80	1.59	1.25	0.82	0.57	0.47	0.34	0.32	0.30	0.19	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
District Maximum		10.04	6.77	5.48	3.91	3.44	1.91	1.70	1.36	1.43	0.91	0.58	0.33	0.35	0.20	0.14	0.21	0.16	0.15	0.11	0.07	0.09	0.08	0.10	0.21	0.09	0.23	0.23

a) Station relocated in 1986.

** Salton Sea Air Basin