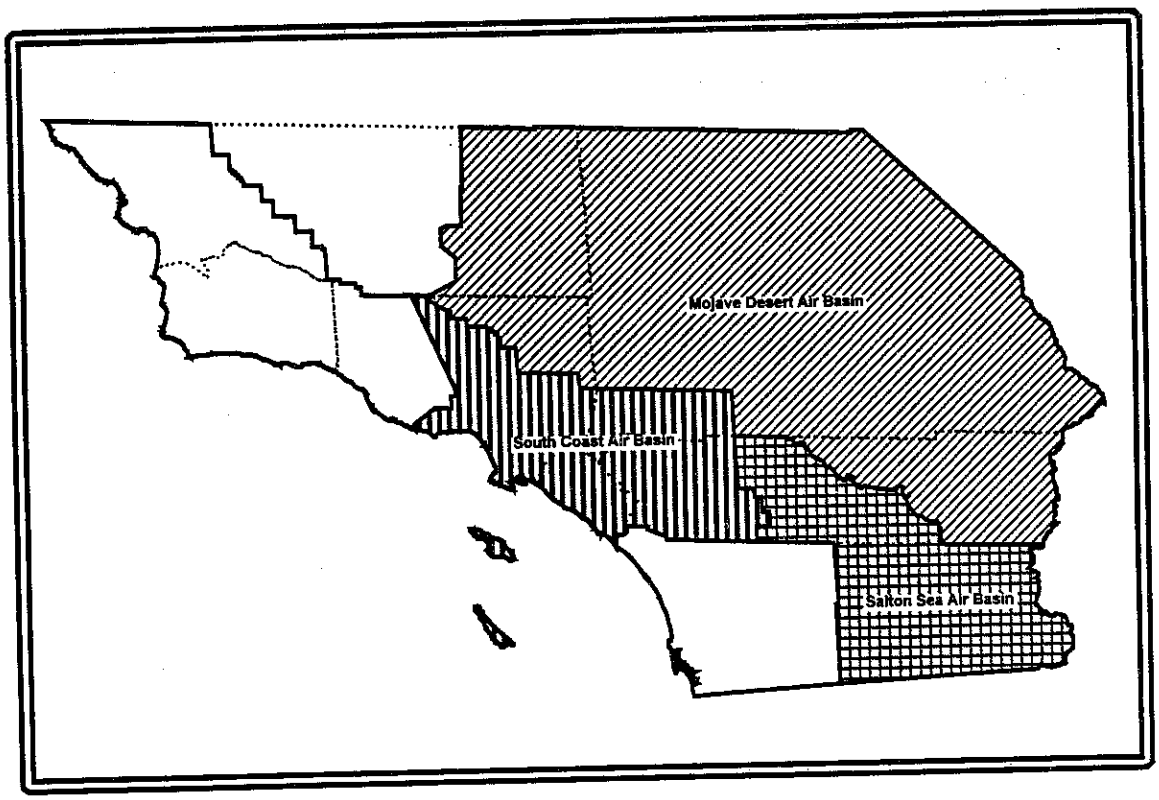
# PROPOSED AMENDMENTS TO DIVIDE THE SOUTHEAST DESERT AIR BASIN AND TO MODIFY THE BOUNDARY OF THE SOUTH COAST AIR BASIN

AND

# PROPOSED AMENDMENTS TO THE RELATED AGRICULTURAL BURNING REGULATIONS

April 1996




California Environmental Protection Agency

Air Resources Board

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## STAFF REPORT: INITIAL STATEMENT OF REASONS FOR PROPOSED RULEMAKING

**May 30, 1996**
**Air Resource Board**
**2020 "L" Street**
**Sacramento, California**

California Environmental Protection Agency
Air Resources Board
Technical Support Division
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This document has been reviewed and approved by the staff of the California Environmental Protection Agency, Air Resources Board. Approval does not signify that the contents necessarily reflect the views and policies of the California Air Resources Board.

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# OVERVIEW AND RECOMMENDATION

## A. OVERVIEW

### 1. Background

California Health and Safety Code (H&SC) Section 39606(a) directs the Air Resources Board (ARB, or the Board) to divide the State into air basins. There are currently 14 air basins in California. Assembly Bill 421 (AB 421), authored by Assemblyman Olberg and enacted in 1995, added Section 39606.1 to the H&SC, which requires that the ARB further divide the current Southeast Desert Air Basin (SEDAB) into two new air basins by January 1, 1997. In addition, Section 39606.1 specifies that one of the two air basins be named the "Mojave Desert Air Basin," and that it include at least the current SEDAB portions of Kern and Los Angeles Counties and all areas under the jurisdiction of the Mojave Desert Air Quality Management District.

Unrelated to AB 421, the South Coast Air Quality Management District (South Coast AQMD) has requested that the ARB realign the air basin boundaries so that the San Gorgonio Pass area, currently a part of the Southeast Desert Air Basin, would become a part of the South Coast Air Basin (SOCAB). The South Coast AQMD believes that San Gorgonio Pass is more similar, in terms of both climate and geography, to adjacent areas of the SOCAB than it is to adjacent areas of the SEDAB.

### 2. Proposed Amendments to the Air Basin Boundaries

The staff proposes to combine, into one regulatory action, the air basin boundary changes required by Section 39606.1 of the H&SC and as requested by the South Coast AQMD. Specifically, the staff proposes the following: (1) Divide the Southeast Desert Air Basin into two new air basins, called the "Mojave Desert Air Basin" (MDAB) and the "Salton Sea Air Basin" (SSAB); and (2) Alter the boundary of the South Coast Air Basin (SOCAB) to make the San Gorgonio Pass area of the current SEDAB a part of the SOCAB. As a result, there would be a total of 15 air basins in California, and there would no longer be an air basin called the "Southeast Desert Air Basin."

The new Mojave Desert Air Basin (MDAB) would consist of the current Southeast Desert Air Basin portions of Kern, Los Angeles, and San Bernardino Counties, and that segment of Riverside County that lies east of the southwestern boundary line of Hydrologic Unit Number 18100100 in Riverside County. This Hydrologic Unit line joins the ridge lines of the Little San Bernardino Mountains and the Chuckwalla Mountains. The proposed MDAB includes all of the territories specified by Section 39606.1, plus a segment of Riverside County that lies beyond the boundary of the Mojave Desert Air Quality Management District. This additional segment of Riverside County is similar to other areas in the proposed Mojave Desert Air Basin in terms of geography and meteorology.

The new Salton Sea Air Basin (SSAB) would consist of all of Imperial County and that segment of the current Southeast Desert Air Basin portion of Riverside County that lies to the west of the southwestern boundary line of Hydrologic Unit Number 18100100 in Riverside County, except for the San Gorgonio Pass area. The SSAB would include all of Imperial County and an area approximately the same as the Federal PM10 planning area of Coachella Valley in Riverside County. The Salton Sea Air Basin would be mostly a low desert, as the elevation of most of this proposed air basin is near or below sea level. Although Section 39606.1 does not specify a name for this air basin, the staff recommends a new name so as to alleviate possible confusion by the public between the old and new versions of the Southeast Desert Air Basin.

The South Coast Air Basin, as modified, would include all of what is now in that air basin plus the San Gorgonio Pass area, also known as the Banning Pass area. The ARB staff believes that the rationale set forth by the South Coast AQMD for making this area a part of the South Coast Air Basin is reasonable.

The proposed changes to air basin boundaries would necessitate that the ARB's air basin-specific agricultural burning regulations be updated. These regulations establish meteorological criteria for determining permissive burn days in each air basin. The staff therefore also proposes revised agricultural burning regulations to provide such meteorological criteria for each of the new air basins.

The proposed changes in air basin boundaries would also affect the area designations for the State ambient air quality standards. The staff plans to propose the appropriate changes to those regulations in the fall of 1996 as a part of the annual review of area designations.

The proposed changes in air basin boundaries would not by themselves affect any design values or other planning requirements with respect to the National ambient air quality standards, unless the U. S. Environmental Protection Agency makes similar changes in the related Federal regulations.

## B. RECOMMENDATION

The ARB staff recommends that the Board amend the air basin boundary regulations in the California Code of Regulations (CCR), Title 17, Sections 60104, 60109, and add Section 60114, as proposed herein. The staff also recommends that the Board amend the agricultural burning regulations in CCR, Title 17, Section 80280, and add Section 80311, as proposed herein. The full texts of the proposed amendments and additional Sections are given in Appendix D for the air basin regulations, and Appendix E for the agricultural burning regulations.

# CHAPTER I

# INTRODUCTION

This chapter provides background information on the air basins and local air pollution control districts in California, describes the requirements of Assembly Bill 421, and summarizes the request by the South Coast Air Quality Management District to realign air basin boundaries.

## A. CALIFORNIA'S AIR BASINS AND AIR DISTRICTS

California is divided geographically into air basins for the purpose of managing the State's air resources on a regional basis. The Air Resources Board (ARB) first established air basins in 1968. California Health and Safety Code (H&SC) Section 39606(a) [see Appendix A] states that, "The state board shall:

> "Based upon similar meteorological and geographical conditions and consideration for political boundary lines whenever practicable, divide the state into air basins to fulfill the purposes of this division."

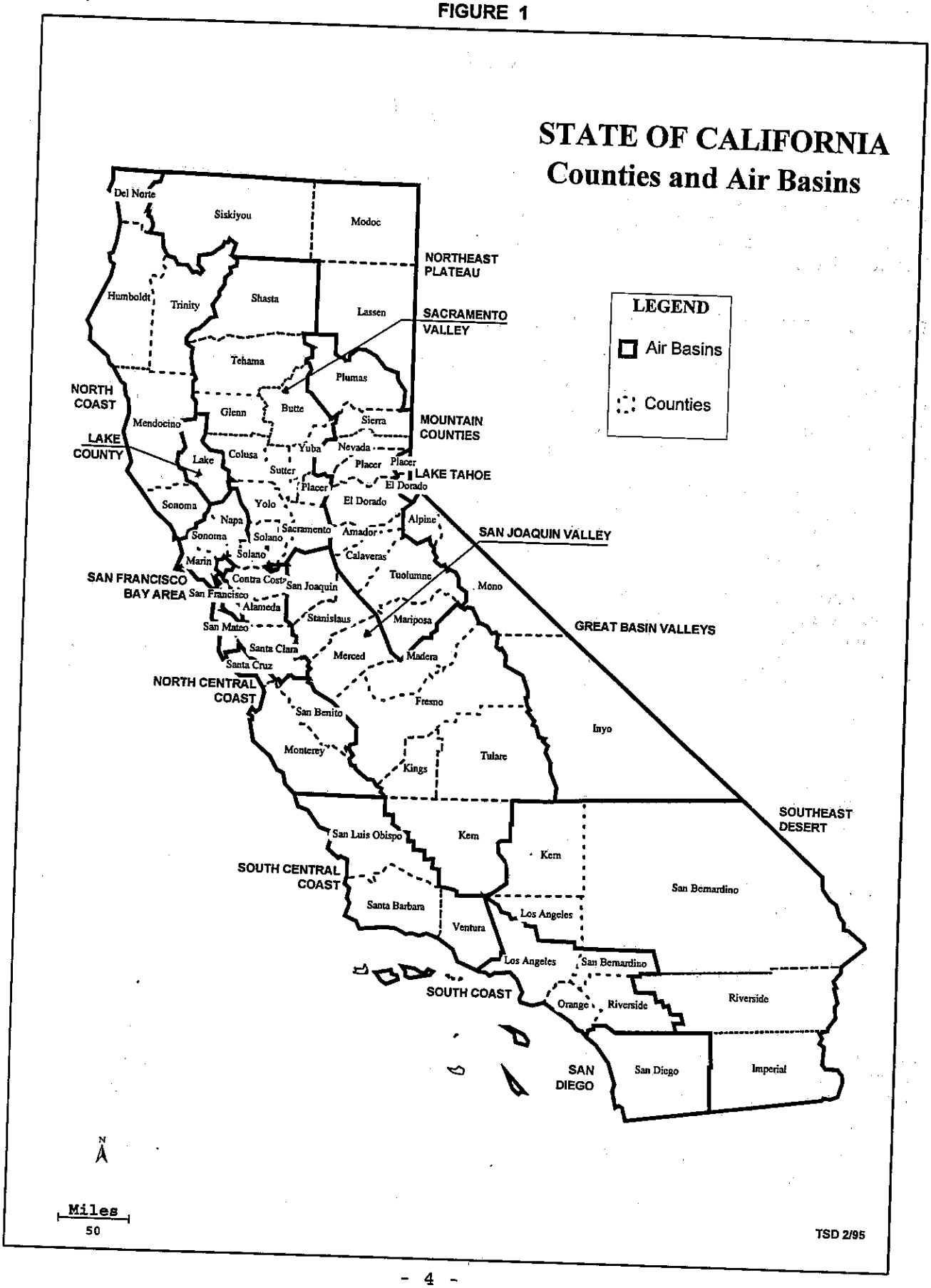
Areas within each air basin are considered to share the same air masses and are therefore expected to have similar ambient air quality. The State is currently divided into 14 air basins. The names of the air basins are listed below in alphabetical order, and their locations in the State are shown on the map in Figure 1.

Great Basin Valleys Air Basin
Lake County Air Basin
Lake Tahoe Air Basin
Mountain Counties Air Basin
North Central Coast Air Basin
North Coast Air Basin
Northeast Plateau Air Basin
Sacramento Valley Air Basin
San Diego Air Basin
San Francisco Bay Area Air Basin
San Joaquin Valley Air Basin
South Central Coast Air Basin
South Coast Air Basin
Southeast Desert Air Basin

As shown in Figure 1, the Southeast Desert Air Basin (SEDAB) currently consists of an eastern portion of Kern County, a northeastern portion of Los Angeles County, a northeastern portion of San Bernardino County, an eastern portion of Riverside County, and all of Imperial County.

The State is also divided into Air Pollution Control Districts and Air Quality Management Districts (air districts), which are county or regional governing authorities that have primary responsibility for

FIGURE 1


STATE OF CALIFORNIA
Counties and Air Basins
LEGEND
Air Basins
Counties
NORTHEAST PLATEAU
SACRAMENTO VALLEY
NORTH COAST
LAKE COUNTY
MOUNTAIN COUNTIES
LAKE TAHOE
SAN JOAQUIN VALLEY
SAN FRANCISCO BAY AREA
GREAT BASIN VALLEYS
NORTH CENTRAL COAST
SOUTHEAST DESERT
SOUTH CENTRAL COAST
SOUTH COAST
SAN DIEGO
Del Norte
Siskiyou
Modoc
Humboldt
Trinity
Shasta
Lassen
Tehama
Plumas
Glenn
Butte
Sierra
Mendocino
Lake
Colusa
Yuba
Nevada
Sutter
Placer
El Dorado
Sonoma
Yolo
Napa
Sacramento
Amador
Alpine
Solano
Calaveras
Marin
Contra Costa
San Joaquin
Tuolumne
Mono
San Francisco
Alameda
Stanislaus
Mariposa
San Mateo
Santa Clara
Merced
Madera
Santa Cruz
Fresno
San Benito
Inyo
Monterey
Kings
Tulare
San Luis Obispo
Kern
Santa Barbara
San Bernardino
Ventura
Los Angeles
Orange
Riverside
Imperial
San Diego
N
Miles
50
TSD 2/95

controlling air pollution from stationary sources. The counties in the SEDAB are under the jurisdiction of four air districts, as shown in Figure 2.

The Mojave Desert Air Quality Management District (Mojave Desert AQMD) has jurisdiction over the SEDAB portion of San Bernardino County, and an easterly segment of Riverside County that is approximately 30 miles wide on average (see Figure 2). The remaining segment of the SEDAB portion of Riverside County is under the jurisdiction of the South Coast Air Quality Management District (South Coast AQMD), which is also responsible for the SEDAB portion of Los Angeles County. (The South Coast AQMD is the air district responsible for all of the South Coast Air Basin.) The Imperial County Air Pollution Control District has jurisdiction over all of Imperial County. The Kern County Air Pollution Control District is responsible for the SEDAB portion of Kern County.

## B. ASSEMBLY BILL 421 (AB 421)

Section 1 of Assembly Bill 421 (AB 421) [Stats. 1995, Ch. 113, Sec. 1], authored by Assemblyman Olberg and signed into law by Governor Wilson on July 18, 1995, added Section 39606.1 to the Health and Safety Code (H&SC). This Section requires the ARB to adopt regulations by January 1, 1997, to divide the current Southeast Desert Air Basin (SEDAB) into two new air basins. One of these new air basins is to be called the "Mojave Desert Air Basin" (MDAB). The MDAB "shall have a territory that is based upon similar meteorological and geographical conditions and consideration for political boundary lines." The full text of AB 421 is shown in Appendix B.

Further, Section 39606.1 requires that the ARB determine the boundaries of the new MDAB, which must include at least the following:

(1) the current SEDAB portion of Kern County;
(2) the current SEDAB portion of Los Angeles County;
(3) the areas in the SEDAB under the jurisdiction of the Mojave Desert Air Quality Management District (Mojave Desert AQMD); and
(4) any other area contiguous to the areas mentioned above that the ARB determines appropriate for inclusion.

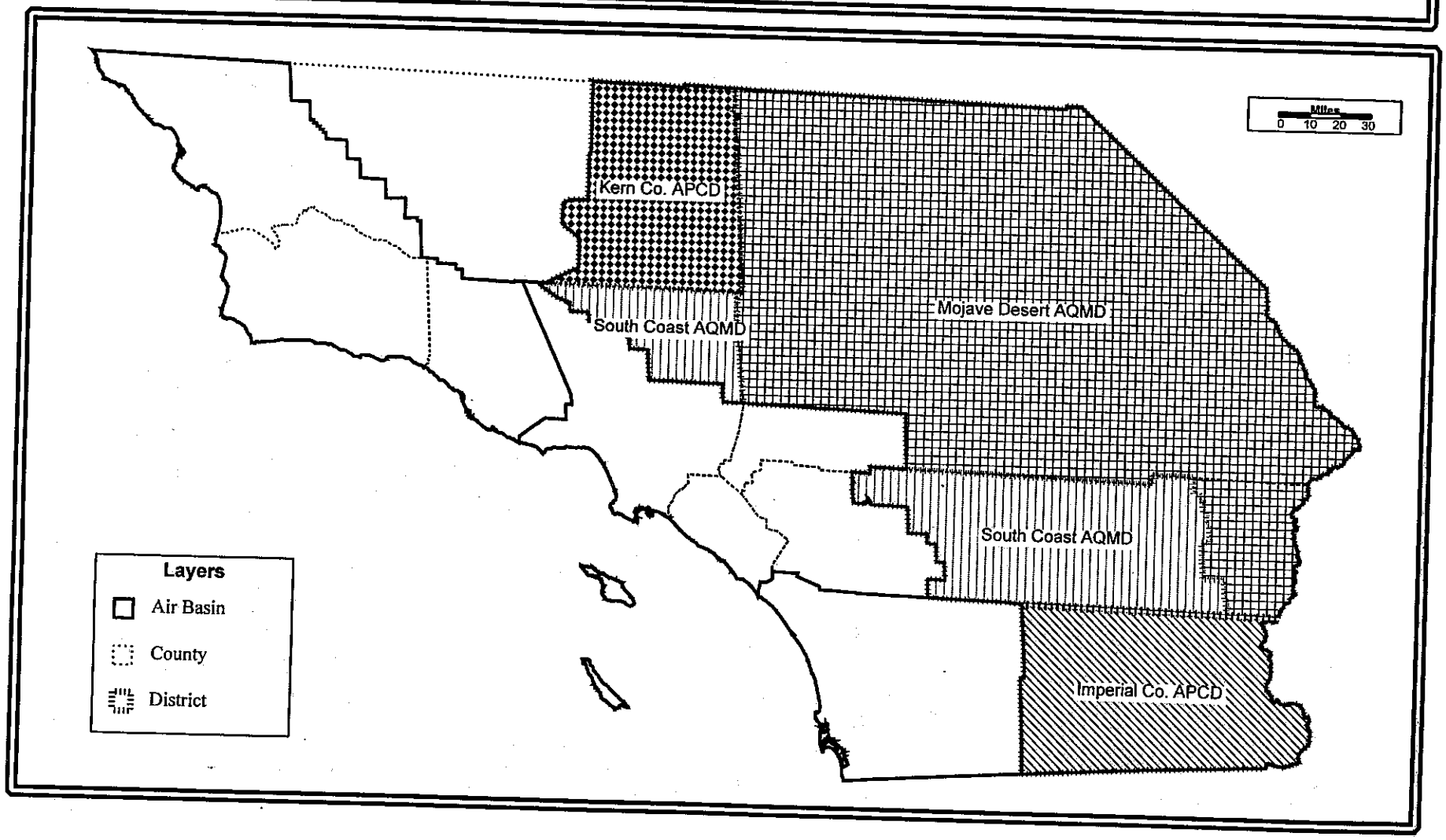
The areas in the SEDAB currently under the jurisdiction of the Mojave Desert AQMD include the SEDAB portion of San Bernardino County and a relatively small, easterly segment of the SEDAB portion of Riverside County (see Figure 2).

A second new air basin would consist of those areas of the SEDAB that are not included by the ARB in the new Mojave Desert Air Basin. Section 39606.1 of the H&SC indicates that these areas shall remain in the SEDAB. The staff believes that it would be appropriate to assign a new name to this second air basin to alleviate possible confusion by the public between the old and new versions of the SEDAB.

In addition, Section 2 of AB 421 amends Section 41200 of the Health and Safety Code. These changes to the legislative findings remove a reference to the "Mojave Desert Region" within the Southeast Desert Air Basin (see Appendix B).

FIGURE 2

# Air Districts in the Southeast Desert Air Basin



## C. SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT'S REQUEST

In a November 1995 letter to James Boyd, Executive Officer of the ARB, the South Coast Air Quality Management District (South Coast AQMD, or the District) requested that the ARB realign air basin boundaries so that the San Gorgonio Pass area, currently a part of the Southeast Desert Air Basin (SEDAB), would be included as a part of the South Coast Air Basin (SOCAB). A copy of the letter and supporting attachments is shown in Appendix C.

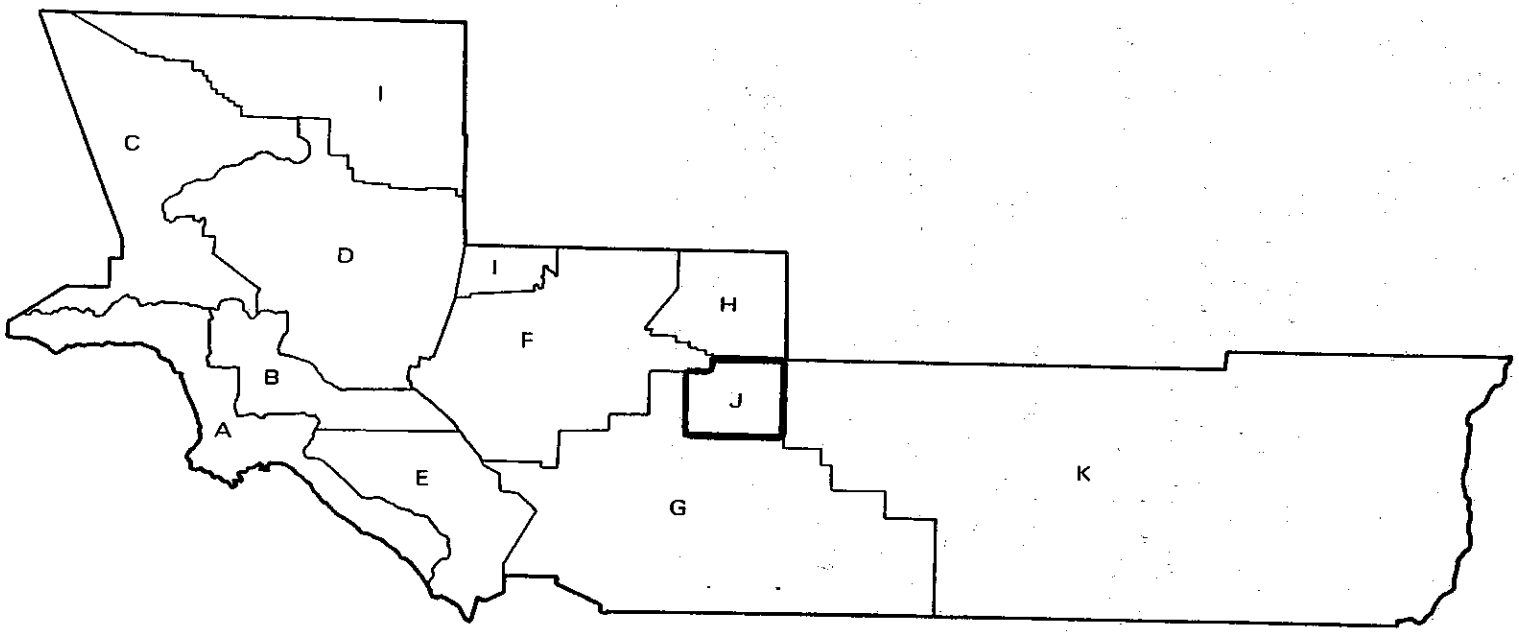
The South Coast AQMD believes that the San Gorgonio Pass area is more similar, in terms of both geography and meteorology, to adjacent areas of the SOCAB than adjacent areas of the SEDAB. Figure 3 shows the location of the San Gorgonio Pass area. The San Gorgonio Pass is a small canyon in northwestern Riverside County, containing the incorporated cities of Banning and Beaumont. Connecting the SOCAB to the SEDAB, it is one of three major routes by which air pollutants are transported out of the SOCAB.

The South Coast AQMD staff conducted an analysis of Beaumont in the San Gorgonio Pass and a number of sites in the SOCAB and the SEDAB. It found that Beaumont is more similar to the sites in the SOCAB than those in the SEDAB in terms of elevation, annual precipitation, and climate classification. The temperature analysis results are not conclusive. Based on the overall results, the District concludes that San Gorgonio Pass should be considered a part of the SOCAB instead of a part of the SEDAB.

Because the South Coast AQMD's request pertains to air basin boundary changes involving the SEDAB, the ARB staff believes that it would be appropriate to consider the request in conjunction with the staff's proposal in response to the requirements of Section 39606.1 of the H&SC.

## FIGURE 3

## THE SAN GORGONIO PASS AREA
## (AREA "J" OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT)




| GENERAL FORECAST AREAS | AIR MONITORING AREAS |
|---|---|
| A-Coastal | 2, 3, 4, 18, 20 |
| B-Metropolitan | 1, 5, 12, 16 |
| C-San Fernando/Santa Clarita Valleys | 6, 7, 13, 15A |
| D-San Gabriel/Pomona Valleys | 8, 9, 10, 11, 15B |
| E-Inland Orange County | 17, 19, 21 |
| F-Riverside/San Bernardino Areas | 22, 23, 32, 33, 34, 35, 37 |
| G-Hemet/Elsinore Area | 24, 25, 26, 27, 28 |
| H-Big Bear Lake Area | 38 |
| I-High Desert | 14, 36, 39, 40 |
| J-Banning Area | 29 |
| K-Low Desert | 30, 31 |

*Air Monitoring Areas are grouped together to form General Forecast Areas.

# CHAPTER II

# CHARACTERISTICS OF THE SOUTHEAST DESERT AIR BASIN

This chapter provides a description of the characteristics of the Southeast Desert Air Basin (SEDAB) in terms of its geography, meteorology, ambient air quality, and air pollutant emissions, in order to facilitate an understanding of the staff's proposal.

## A. GEOGRAPHY

The Southeast Desert Air Basin (SEDAB), which includes the hottest and driest parts of California, is located in the southeastern corner of the State. One of the largest of the 14 air basins in California, it covers an area of about 33,000 square miles. The basin is bounded on the north by Inyo County of the Great Basin Valleys Air Basin; on the east by the states of Nevada and Arizona; on the south by the country of Mexico; and on the west by the San Diego, South Coast, and San Joaquin Valley Air Basins.

The SEDAB currently consists of a portion of Kern County east of the Tehachapi Mountains, a portion of Los Angeles County northeast of the San Gabriel Mountains, a portion of San Bernardino County northeast of the San Gabriel and San Bernardino Mountains, a portion of Riverside County east of the San Bernardino and San Jacinto Mountains, and all of Imperial County.

The SEDAB is sparsely populated. Its population in 1993 (the most recent year for which data are available) was 1,225,000. It has a population density of about 40 persons per square mile; this compares to a population density of 2,100 persons per square mile in the neighboring South Coast Air Basin.

As shown in Figure 4, the major mountain passes around the SEDAB are: Soledad Canyon Pass in Los Angeles County, Cajon Pass in San Bernardino County, San Gorgonio Pass in Riverside County, and Tehachapi Pass in Kern County, Air quality in the SEDAB is impacted by transport of pollutants and precursors from the South Coast Air Basin and possibly the San Joaquin Valley Air Basin. In addition, international transport from Mexico may also impact the air quality in the SEDAB.

Figure 5 is a map showing the elevation contours for the SEDAB. The basin consists of large tracts of mountainous terrain as well as low lying valleys, all under a desert climate. The elevations in the basin range from 235 feet below sea level at the Salton Sea to 11,500 feet at the summit of Mount San Gorgonio. It can be seen from the map that the SEDAB contains two distinct parts: a northern part (High Desert) and a southern part (Low Desert).

The High Desert can be described as a desert region with typical elevations of 2,000 feet to 4,000 feet. Most of this high desert area

## FIGURE 4
## MOUNTAIN RANGES AROUND THE SOUTHEAST DESERT AIR BASIN

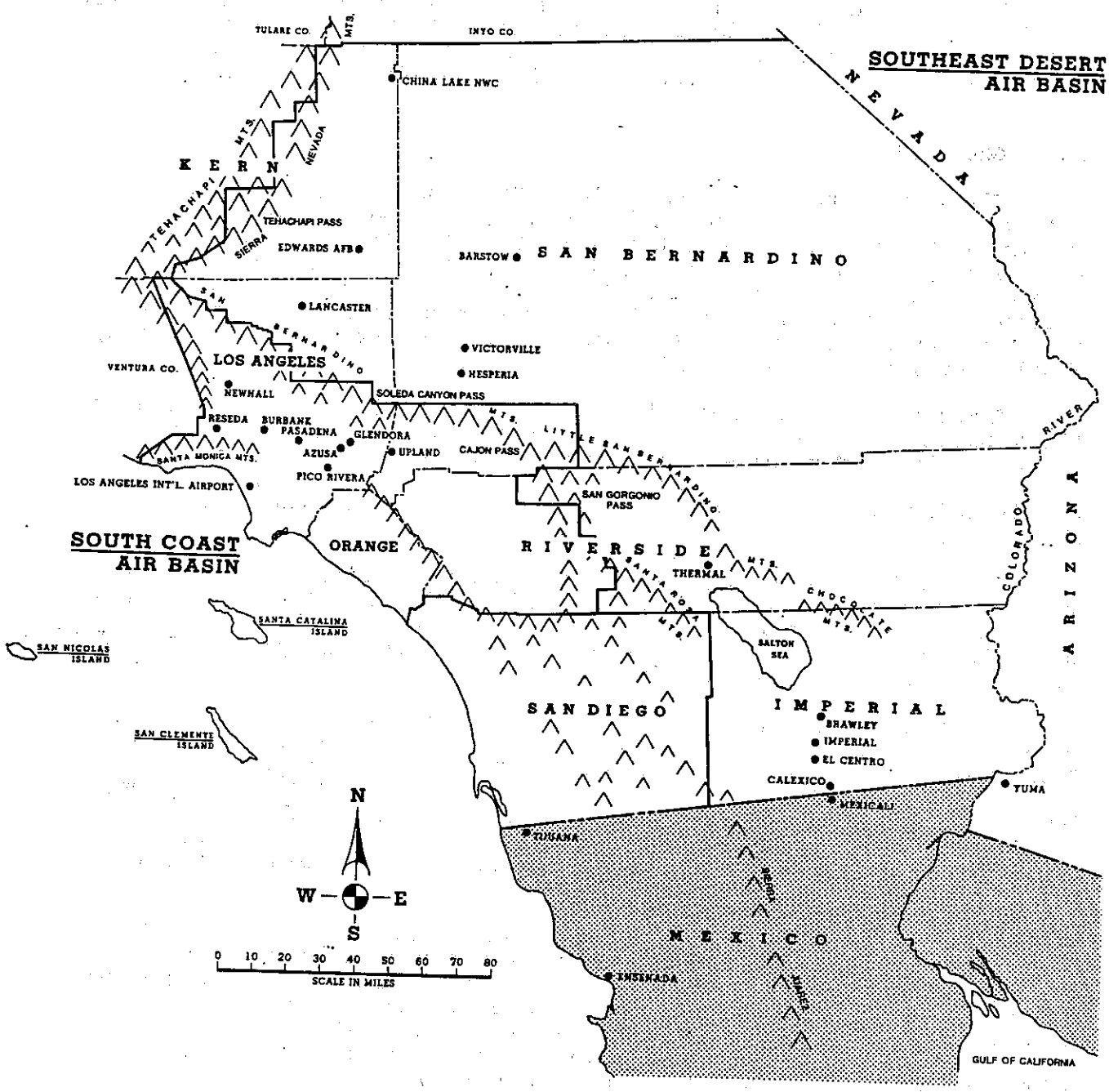
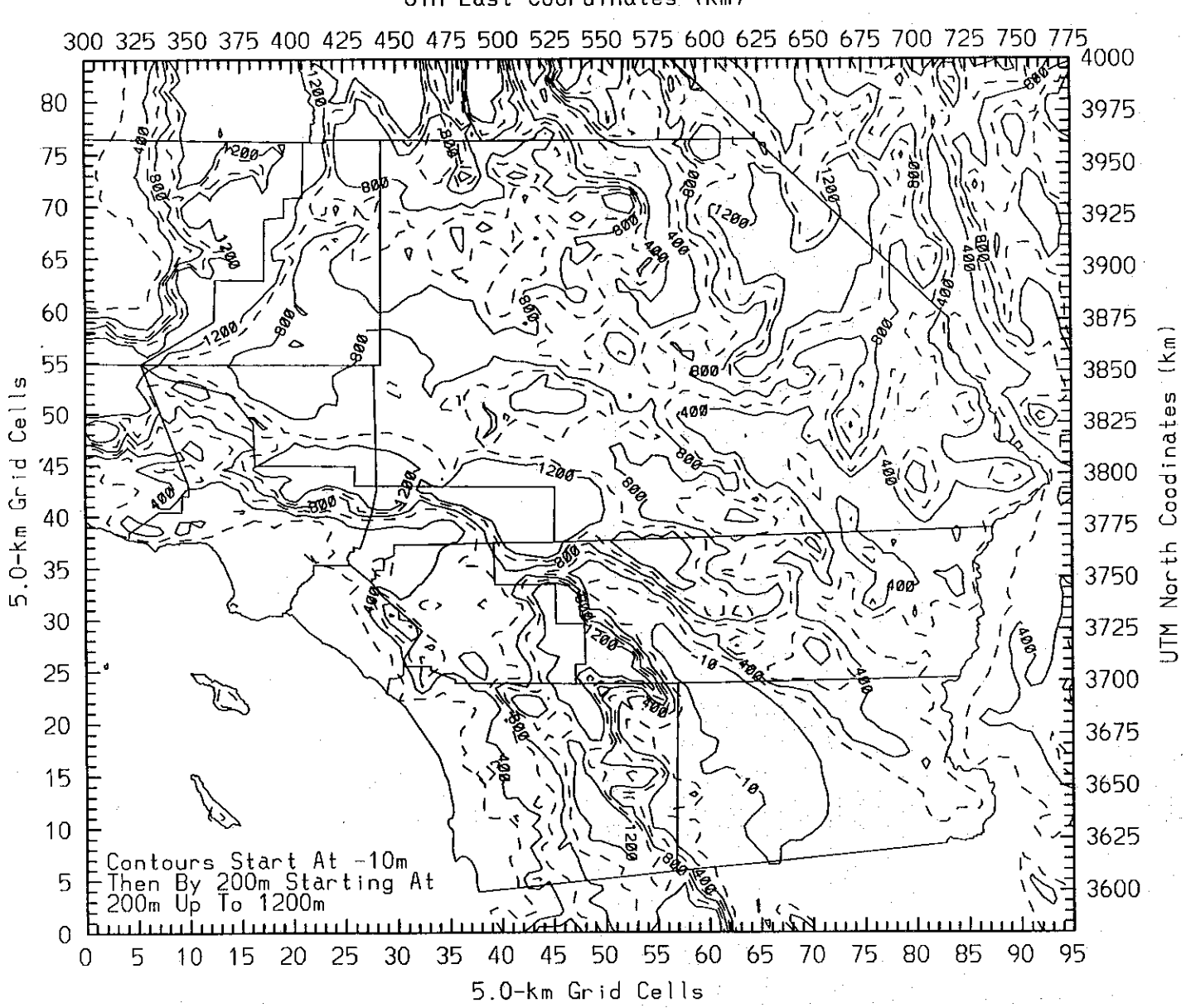


**FIGURE 5**

**ELEVATION CONTOURS FOR THE SOUTHEAST DESERT AIR BASIN (meters)**



is commonly known as the Mojave Desert of California. The SEDAB portions of San Bernardino, Kern, and Los Angeles Counties and approximately the northeastern half of the SEDAB portion of Riverside County have this type of terrain and make up the High Desert.

The Low Desert can be described as a desert region with typical elevations that are near or below sea level. Imperial County and approximately the southwestern half of the SEDAB portion of Riverside County have this type of terrain and make up the Low Desert. The Low Desert includes two major desert valleys, the Coachella Valley in Riverside County and the Imperial Valley in Imperial County, and a saline lake called the Salton Sea.

## B. METEOROLOGY

The Southeast Desert Air Basin (SEDAB) has a continental climate, with a low level of marine influence relative to the coastal air basins of California. There are large diurnal temperature ranges of 30 to 40 degrees F during the summer and 20 to 30 degrees F during the winter. Summers are hot, with daytime high temperatures typically over 100 degrees F during July. Winters are mild, with temperatures only occasionally dropping below the freezing point during January. Annual precipitation is small at meteorological stations in the SEDAB, generally in the range of 2 to 8 inches per year. Humidity is also low throughout the basin. Average relative humidity at midday is below 25 percent, except during the winter when it may reach about 40 percent.

Predominant wind directions in the SEDAB are from the west and south for most of the year. Winds having easterly components in the fall and winter after frontal systems pass through the area are commonly known as Santa Ana winds. Similar to most desert regions, wind speeds can be quite high at times. Hourly average wind speeds between 20 and 40 miles per hour may occur several days per year on average. A more complete discussion of the meteorology of the SEDAB can be found in an ARB report entitled, "Climate of the Southeast Desert Air Basin" [Ref. 1]. The remainder of this section will focus on comparing and contrasting the meteorological characteristics of the High Desert versus the Low Desert of the SEDAB.

Meteorological and ambient air quality data are available to the staff for a number of monitoring sites in the SEDAB (see Table 1). The names and locations of these monitoring sites are shown in Figure 6 and listed in Table 1. The following monitoring sites are in the Low Desert: Brawley, Imperial, El Centro, and Calexico in the Imperial Valley; and Palm Springs and Indio in the Coachella Valley. All other monitoring sites shown in Figure 6 are in the High Desert of the SEDAB.

A review of the topography for the monitoring sites provides a background for understanding how the climate and air quality at the Low Desert sites may be different than those at the High Desert sites. The elevation of each of the monitoring sites in the SEDAB is shown in Figure 7 and listed in Table 1. It can be seen that sites in the Low Desert are typically near or below sea level. Even Palm Springs, at an elevation of 430 feet, is at a considerably lower elevation than

# TABLE 1

## Summary of Meteorological and Air Quality Data for the Southeast Desert Air Basin

| Desert | County Name | AQD Site # | Site Name | Elevation | Precip. | Avg Temp | Max Temp | Min Temp | Ozone | PM10 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 1. | 2. | 3. | 4. | 5. | 6. | 7. |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| High Desert | Kern | 1500249 | Mojave-Airport | 2740 | 6.1 | | | | | |
| | Los Angeles | 7000096 | Lancaster-W Pondera | 2340 | 3.9 | | | | 16.1 | 88 |
| | Los Angeles | NA | Palmdale | 2600 | 7.4 | 62 | 98 | 32 | | |
| | Riverside | 3300161 | Blythe-Murphy | 270 | 3.8 | | | | | |
| | San Bernardino | 3600155 | Barstow | 2320 | 4.1 | 64 | 103 | 32 | 12.3 | 83 |
| | San Bernardino | 3600188 | Trona-Market Street | 1700 | | | | | | |
| | San Bernardino | 3600191 | Twentynine Palms-Adobe | 1980 | 4.3 | | | | | |
| | San Bernardino | 3600201 | Hesperia-Olive Street | 3200 | | | | | 18.5 | 81 |
| | San Bernardino | 3600207 | Phelan-Beekley | 4100 | | | | | 18.9 | |
| | San Bernardino | 3600208 | Lucerne Valley-Middle School | 2900 | | | | | | 60 |
| | San Bernardino | 3600209 | Victorville-Armagosa | 2800 | 5.5 | 60 | 98 | 30 | 16.1 | 100 |
| | San Bernardino | NA | Joshua Tree | 2750 | | | | | | |
| | | | | | | | | | | 176 |
| Low Desert | Imperial | 1300693 | Brawley-Main Street | -100 | 3.1 | | | | 12.7 | 147 |
| | Imperial | 1300694 | El Centro-9th Street | -30 | 2.7 | | | | 15.3 | |
| | Imperial | 1300695 | Calexico-Grant | 10 | 2.8 | | | | | |
| | Imperial | NA | Imperial | -60 | 2.4 | 73 | 107 | 42 | 15.3 | 84 |
| | Riverside | 3300137 | Palm Springs-Fire Station | 430 | 5.2 | 72 | 109 | 41 | 13.3 | 125 |
| | Riverside | 3300157 | Indio-Jackson Street | -20 | 3.1 | 73 | 107 | 38 | | |

1. Elevation (Feet)
2. Average Annual Precipitation (Inches)
3. Annual Average Temperature (Degrees Fahrenheit)
4. Average Daily Maximum Temperature in July (Degrees Fahrenheit)
5. Average Daily Minimum Temperature in January (Degrees Fahrenheit)
6. Ozone Expected Peak Day Concentration (pphm) for the 1992-1994 period
7. PM10 Expected Peak Day Concentration (ug/m3) for the 1992-1994 period

FIGURE 6

# Southeast Desert Air Basin

## Air Quality and Meteorological Monitoring Sites

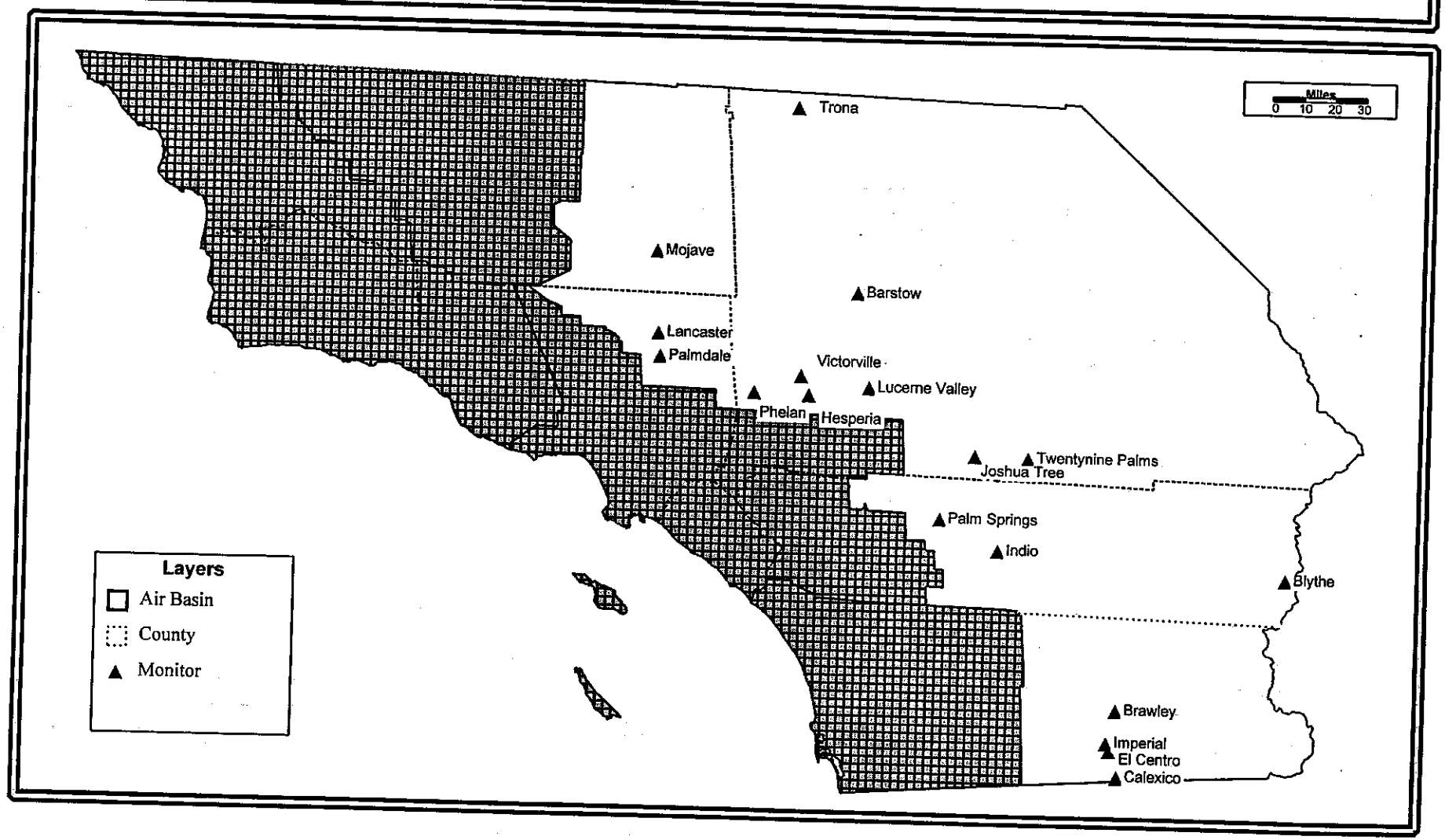
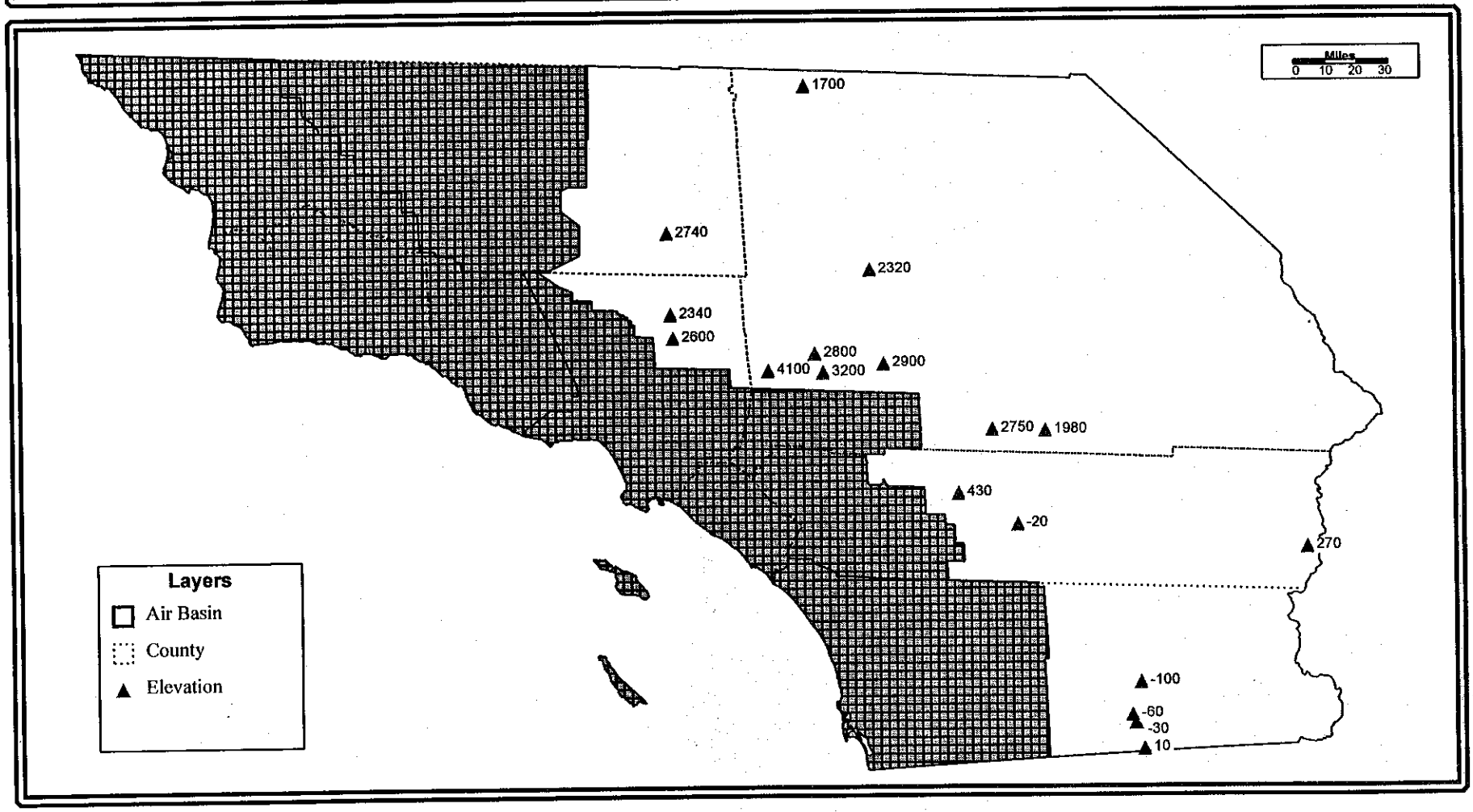


FIGURE 7

# Southeast Desert Air Basin

## Monitoring Station Elevation (Feet)



the sites in the High Desert, which are at elevations generally between 2,000 and 4,000 feet. The difference in elevation may be a major reason why the climatology [Ref. 2, 3.] of the Low Desert is different from that of the High Desert, as discussed below.

As mentioned above, the precipitation is low throughout the desert environment of the SEDAB. However, an examination of the annual precipitation data shows that there is generally more precipitation in the High Desert than in the Low Desert. The average annual precipitation for monitoring sites with available data are shown in Figure 8 and listed in Table 1. With the exception of Palm Springs, which has 5.2 inches, the annual precipitation for most sites in the Low Desert is 3 inches or below. In comparison, the annual precipitation for sites in the High Desert is in the range of 4 to about 7.5 inches. While the precipitation is low in absolute terms for both the High and Low Deserts, a ratio of 2 to 1 is significant.

From the above data, there appears to be a relationship between the precipitation a given site in the SEDAB and its elevation. That is, precipitation tends to be higher at higher elevations. Precipitation is not only higher at sites with elevations at the 2,000 to 4,000 feet levels, but Palm Springs in Riverside County also has a higher precipitation than the remaining sites in the Low Desert even though its elevation is only a few hundred feet higher than the other sites.

There is also a difference between the High Desert and the Low Desert in terms of temperature. Three simple temperature statistics are used. The annual average temperature, the average daily maximum temperature in July (summer), and the average daily minimum temperature in January (winter), all in degrees Fahrenheit, are shown in Figures 9, 10, and 11, respectively, and also listed in Table 1, for monitoring sites with available data. There is a significant pattern for each statistic, as sites in each of the two component deserts of the SEDAB show very similar values within each group.

As seen in Figure 9, the annual average temperatures at the sites in the High Desert are in the low 60's (60 to 64 degrees), while those at the sites in the Low Desert are in the low 70's (72 to 73 degrees). Figure 10 shows that the average maximum temperatures in July are around 100 (98 to 103) degrees F at the sites in the High Desert but are nearly 110 (107 to 109) degrees F at the sites in the Low Desert. In addition, Figure 11 shows that the average minimum temperatures in January are around the freezing point (30 to 32 degrees F) in the High Desert but cluster around 40 (38 to 42) degrees F in the Low Desert.

Thus, similar to the precipitation data, the temperature data also demonstrate a difference between the High Desert and the Low Desert of the SEDAB. Typically, the High Desert sites are approximately 10 degrees cooler than the Low Desert sites, whether they are measured in terms of annual average temperatures, or in terms of average maximum or minimum temperatures.

Therefore, based on both the precipitation and temperature data, sites within the High Desert share similar meteorological characteristics, and sites within the Low Desert also share similar meteorological characteristics, and there is a meaningful difference

FIGURE 8

# Southeast Desert Air Basin

Average Annual Precipitation (inches)

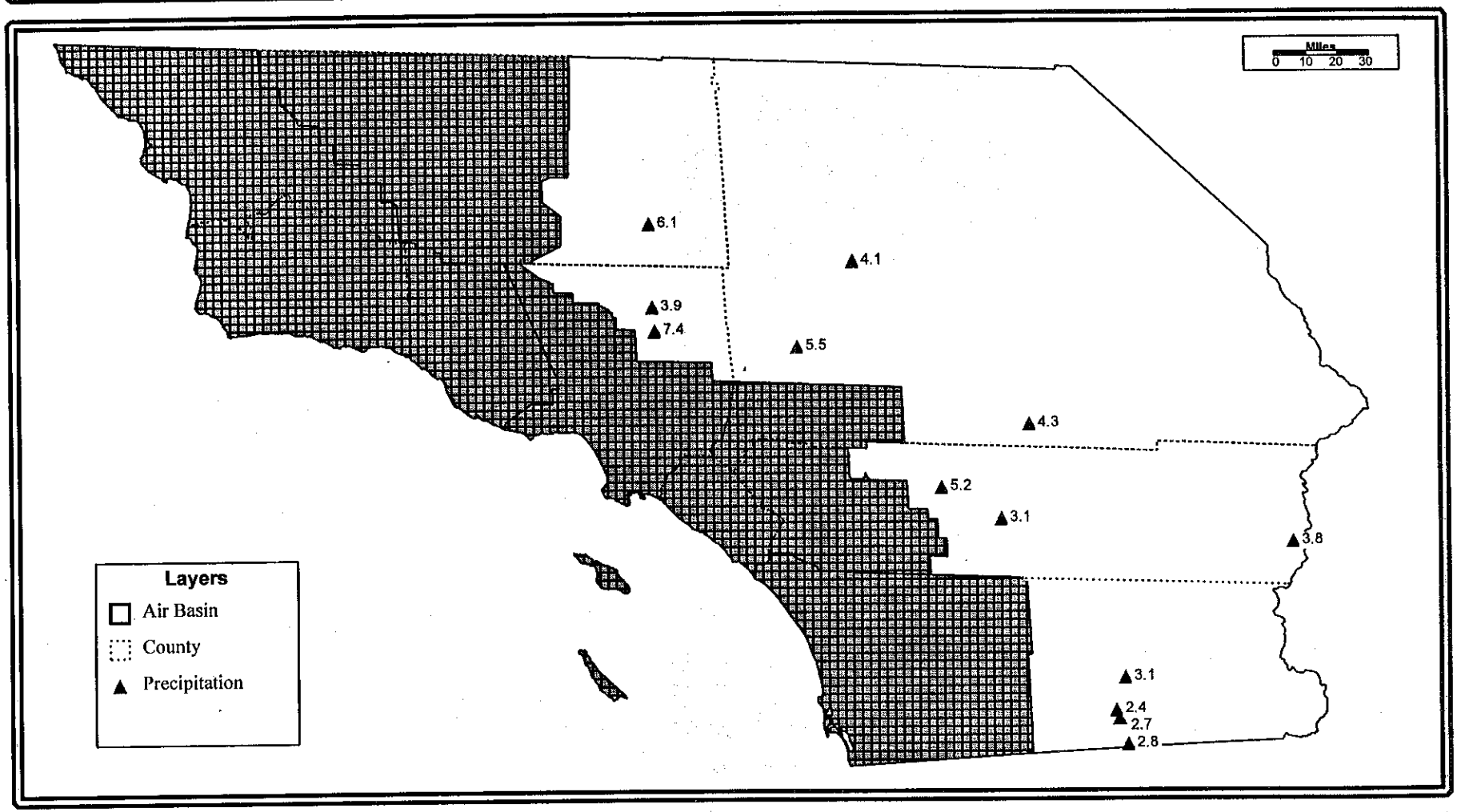


FIGURE 9

## Southeast Desert Air Basin

Average Annual Temperature (F)

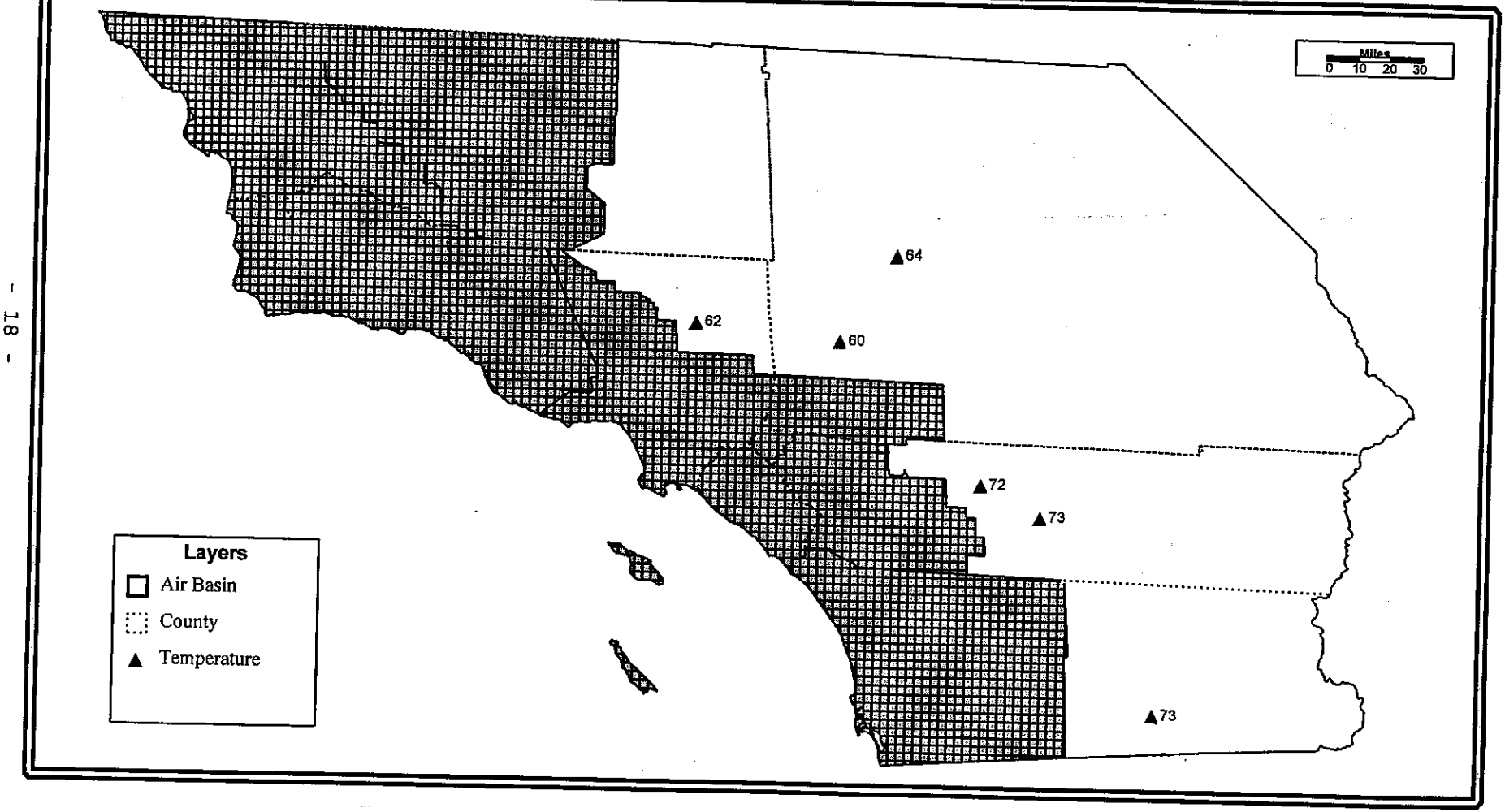


FIGURE 10

## Southeast Desert Air Basin

Average Daily Maximum Temperatures in July (F)

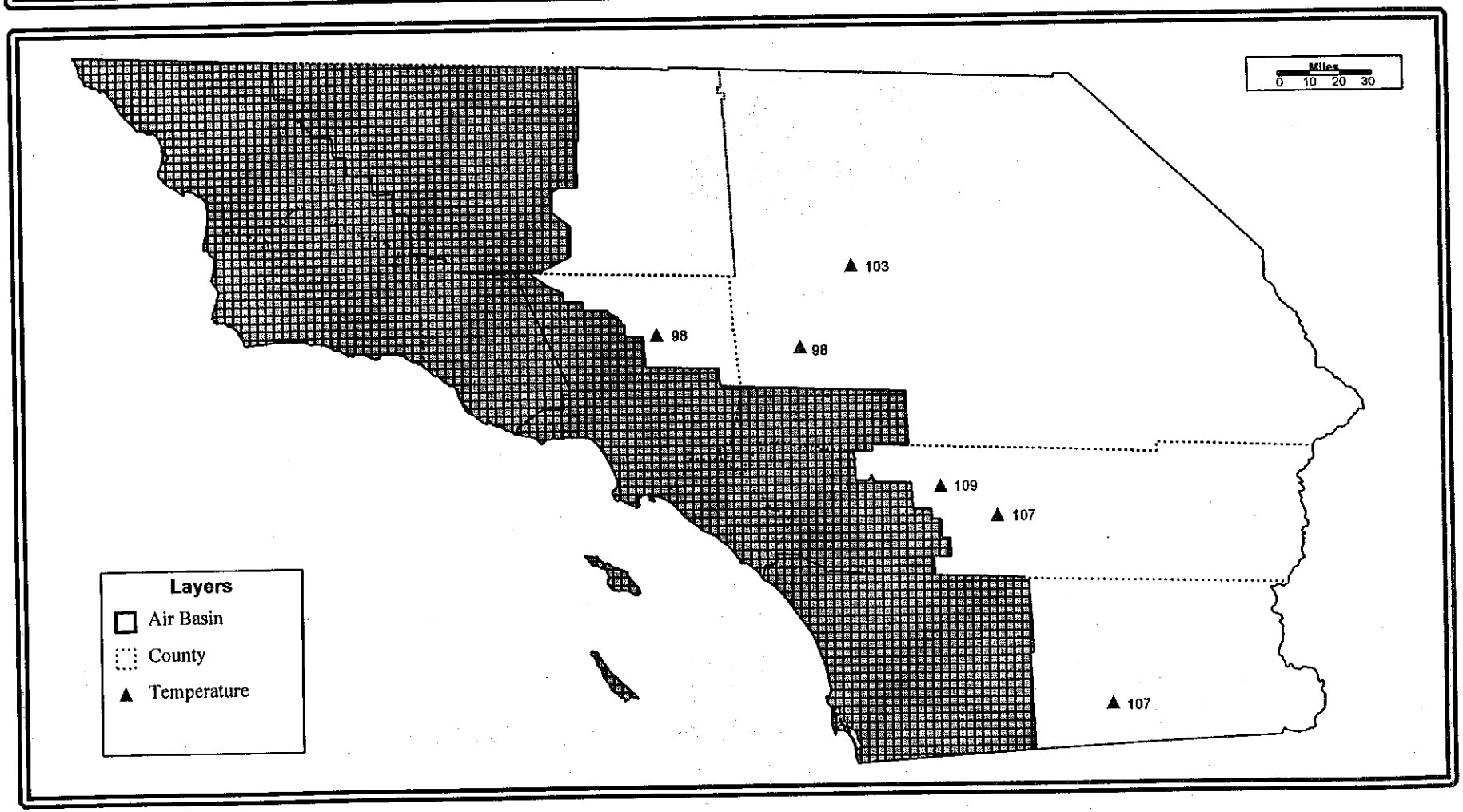
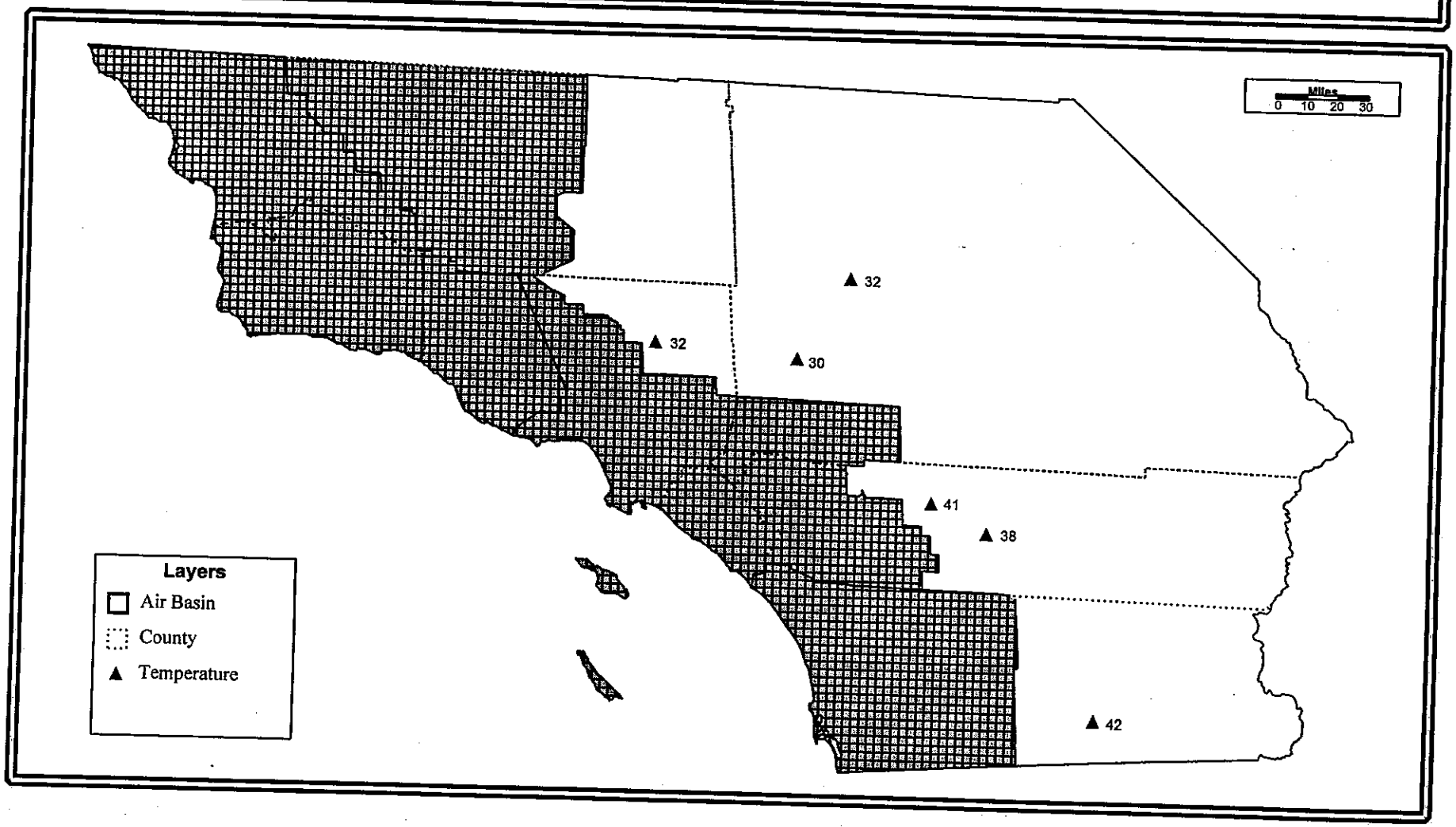


FIGURE 11

# Southeast Desert Air Basin

## Average Daily Minimum Temperatures in January (F)



in meteorology between the two groups of sites. From these observations, there appears to be a distinguishable difference in climate between the High Desert and the Low Desert of the SEDAB.

## C. AIR QUALITY

The ambient air quality in the Southeast Desert Air Basin (SEDAB) can be reviewed in terms of the air pollutants for which there is ambient monitoring in the SEDAB: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter (PM10), sulfates, lead, and hydrogen sulfide. A summary of the air quality data by air pollutant and by air basin is given in an annual ARB publication entitled, "California Air Quality Data" [Ref. 4].

The SEDAB has a serious air quality problem with mainly two pollutants: ozone and PM10. The entire SEDAB is designated as nonattainment by the ARB for the State ambient air quality standards for both ozone and PM10 (for an explanation of attainment and nonattainment designations, see Ref. 5). A majority of the SEDAB is also designated as nonattainment by the U.S. Environmental Protection Agency for the National ambient air quality standards for ozone and PM10.

There are air quality problems in the SEDAB with other pollutants, which are confined to substantially smaller geographical extents. The City of Calexico, in Imperial County near the international border with Mexico, is designated as nonattainment for the State carbon monoxide standards. The Searles Valley Planning Area, in the northwestern corner of San Bernardino County, is designated as nonattainment for the State standards for both sulfates and hydrogen sulfide. The staff believes that the poor air quality with respect to these pollutants is limited to those local nonattainment areas and is not a basinwide problem.

The remainder of this section will take a closer look at the ambient ozone and PM10 concentrations, the two pollutants for which the air quality problems are basinwide. Figure 12 shows the ozone Expected Peak Day Concentrations (EPDC) for monitoring sites in the SEDAB with representative air quality data [Ref. 5]. The EPDC is the ambient concentration calculated by the ARB staff which is not expected to recur more frequently than once per year. The EPDC values are based on the three-year period of 1992 through 1994, the most recent period for which data are available at the time of this report. The EPDC is a statistically robust indicator, that is, it is not expected to vary substantially from one three-year period to another.

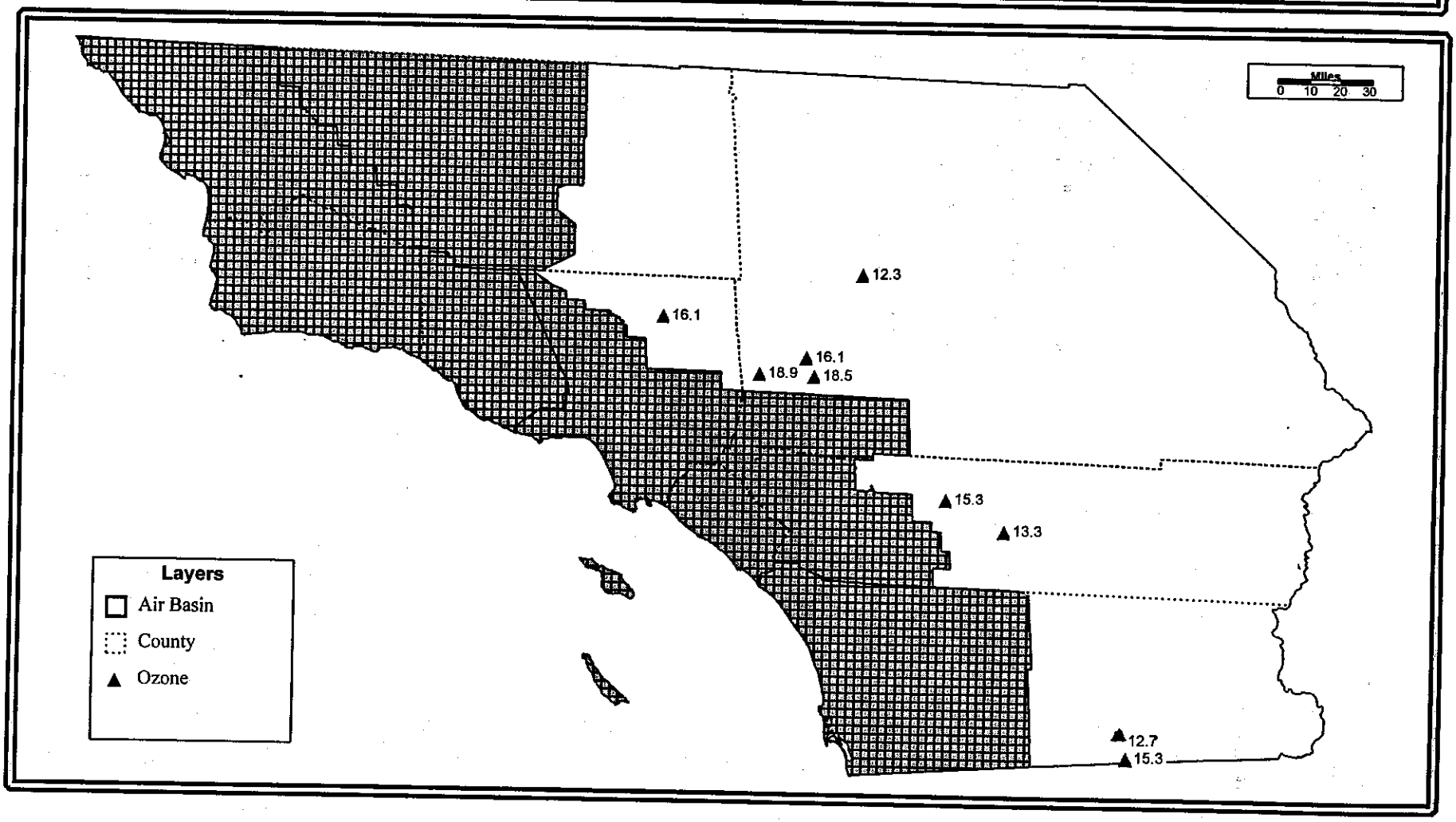
The ozone EPDC values for sites in the High Desert range from 12.3 parts per hundred million (pphm) at Barstow to 18.9 pphm at Phelan, both in San Bernardino County. Ozone concentrations at the remaining sites in the High Desert are closer to the top end of this range than the bottom end. Ozone EPDC values in the Low Desert range from 12.7 pphm at El Centro in Imperial County to 15.3 pphm at both Calexico and Palm Springs.

The bottom ends of the ozone EPDC ranges are similar between the High Desert and Low Desert, but the top end for the High Desert is

FIGURE 12

# Southeast Desert Air Basin

## Ozone Expected Peak Day Concentrations (pphm)



about 25 percent higher than that for the Low Desert. The average ozone EPDC for the High Desert sites is 16.4 pphm, about 15 percent higher than the average of 14.2 pphm for the Low Desert sites. Peak ozone concentrations in the SEDAB can be site-specific, depending partly on how close a given site is to the upwind air basins on the route of inter-basin transport. Although the data are not completely conclusive, ozone concentrations in the High Desert appear to be higher than those in the Low Desert based on the average ozone EPDC for the sites within each group as well as the upper end of the EPDC ranges.

Figure 13 shows the PM10 Expected Peak Day Concentrations (EPDC), also based on data for the 1992-1994 period, for monitoring sites in the SEDAB for which representative data are available. Ambient samples for PM10 are taken for a 24-hour averaging time once every sixth day.

The PM10 EPDC values for sites in the High Desert range from 60 micrograms per cubic meter (ug/m3) at Lucerne Valley to 100 ug/m3 at Victorville, both in San Bernardino County. The PM10 EPDC for the other sites in the High Desert are in the middle of this range, or around 80 ug/m3. The PM10 EPDC values for sites in the Low Desert range from 84 ug/m3 at Palm Springs to 176 ug/m3 at Brawley in Imperial County. A possible reason for this large range is that Palm Springs has a higher elevation and also a higher level of precipitation than other sites in the Low Desert. The PM10 concentrations at Palm Springs may not be consistent with those at the sea level elevation sites in the Low Desert. Without considering Palm Springs, the PM10 EPDC range in the Low Desert is from 125 ug/m3 at Indio in Riverside County to 176 ug/m3 at Brawley.

As compared to ozone, there appears to be a more significant difference in PM10 concentrations between the High Desert and the Low Desert. While the PM10 concentrations in the High Desert are at 100 ug/m3 or below, those in the Low Desert are mostly much higher than 100 ug/m3. In fact, excluding Palm Springs, the PM10 EPDC ranges of the Low Desert and the High Desert do not overlap each other, and the average PM10 EPDC for the Low Desert sites is about 80 percent higher than the average PM10 EPDC for the High Desert sites. Thus, based on both the range and average of PM10 EPDC values, it appears that PM10 concentrations in the Low Desert are generally higher than those in the High Desert.

Therefore, in terms of the two pollutants with which the Southeast Desert Air Basin has serious basinwide problems, there appears to be a distinguishable difference in ambient air quality between the High Desert and the Low Desert of the SEDAB.

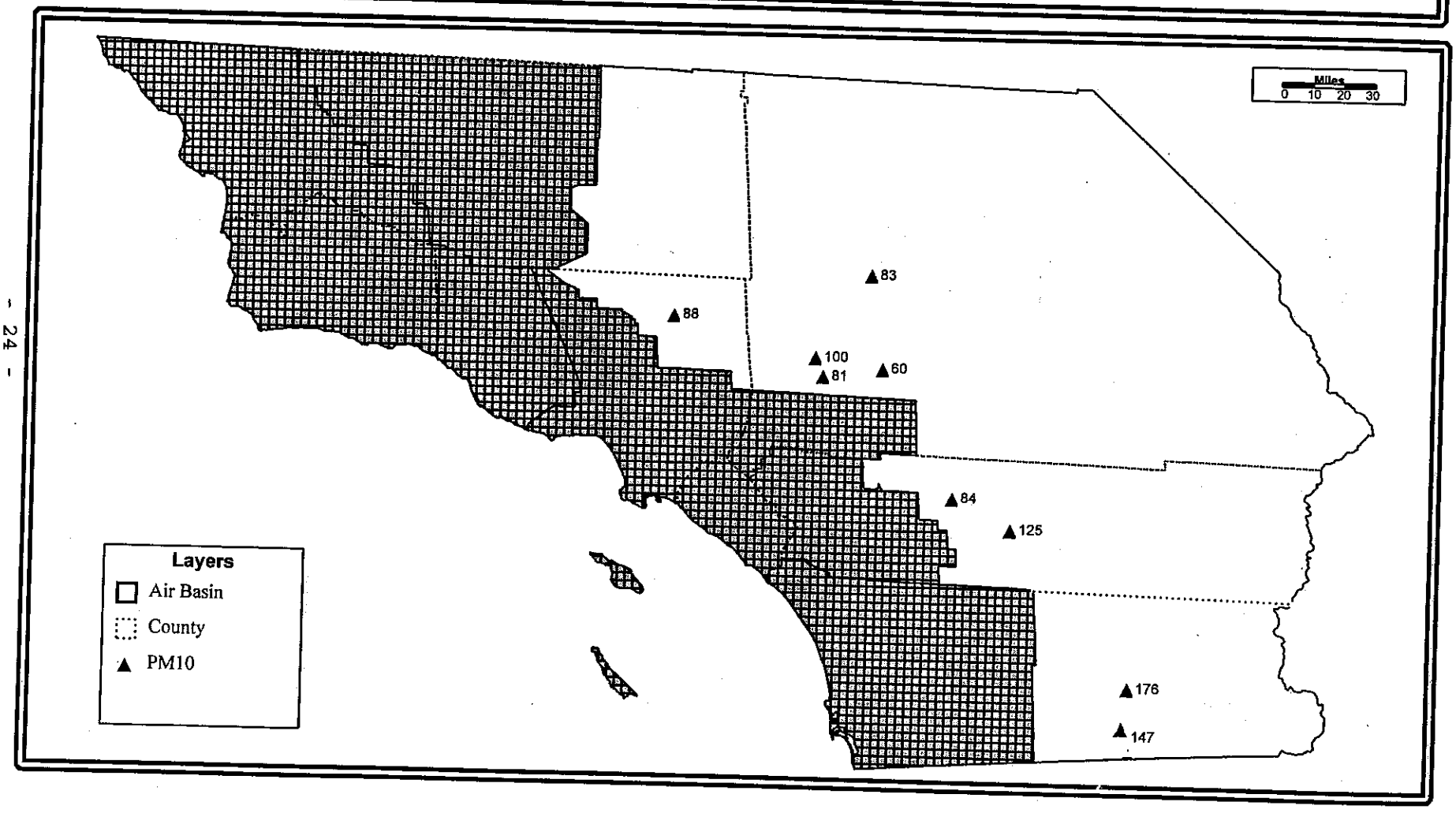
## D. EMISSIONS

The characteristics of the Southeast Desert Air Basin (SEDAB) can be examined further by reviewing the air pollutant emissions. It was mentioned in the previous section that ozone and PM10 pose the most serious air quality problems in the SEDAB. The two major emitted precursor pollutants to ambient ozone are oxides of nitrogen (NOx) and reactive organic gases (ROG). For ambient PM10, the major

FIGURE 13

## Southeast Desert Air Basin

PM10 Expected Peak Day Concentrations (ug/m3)



contributing pollutant is directly emitted PM10. In California, NOx and ROG could also be significant precursors to secondary PM10 in some areas.

The ARB staff prepares annual emission inventories for each of these pollutants. In terms of geographical area, emissions estimates are available by air basin, by county portions of air basin, and by air district segments of county. For the SEDAB, separate emission estimates are available for six county/air district portions: Imperial County, the SEDAB portions of Kern, Los Angeles, and San Bernardino Counties, and the South Coast AQMD and Mojave Desert AQMD segments of the SEDAB portion of Riverside County. The NOx, ROG, and PM10 emissions for each of these portions are shown in Figures 14, 15, and 16, respectively, and listed in Table 2.

While the geographical boundaries for these emission data do not coincide exactly with the concept of the High Desert and Low Desert of the SEDAB, the emissions for the High Desert and the Low Desert can be estimated with reasonable accuracy. This is because, although approximately the northeastern half of the South Coast AQMD segment of the SEDAB portion of Riverside County would be considered a part of the High Desert, the emissions in this part of the South Coast AQMD segment are believed by the staff to be relatively negligible. Thus, total emissions for the Low Desert can be estimated by adding the emissions for Imperial County and the emissions for the South Coast AQMD segment of the SEDAB portion of Riverside County. The total emissions for the High Desert would be the sum of the emissions for the SEDAB portions of Kern, Los Angeles, and San Bernardino Counties, and the Mojave Desert AQMD segment of Riverside County.

Using this estimation method, the approximate emissions for the High Desert and the Low Desert are, respectively: NOx emissions: 209 tons per day (TPD) and 96 TPD; ROG emissions: 122 TPD and 79 TPD; and direct PM10 emissions: 270 TPD and 1,127 TPD. Thus, emissions of the ozone precursors (NOx and ROG) for the High Desert are higher than those for the Low Desert, while direct PM10 emissions are higher in the Low Desert than in the High Desert.

These emission patterns appear to be consistent with the ambient ozone and PM10 air quality patterns discussed in the previous section. There is not always a direct relationship between pollutant emissions and air quality, and ambient concentrations depend on many factors such as the distribution and density of emission sources, the topography and meteorology of the area, and long-range transport. However, the higher ozone precursor emissions in the High Desert are consistent with its higher ozone concentrations compared to those in the Low Desert. And the considerably higher, direct PM10 emissions in the Low Desert are consistent with its considerably higher PM10 concentrations than those in the High Desert.

In summary, there appears to be a distinguishable difference in air pollutant emissions between the High Desert and the Low Desert; the ozone precursor emissions are higher in the High Desert but the direct PM10 emissions are higher in the Low Desert; and these emission patterns are consistent with the corresponding ambient air quality.

FIGURE 14

# Southeast Desert Air Basin

Oxides of Nitrogen (NOX) Emissions in 1993 (Tons per Day)

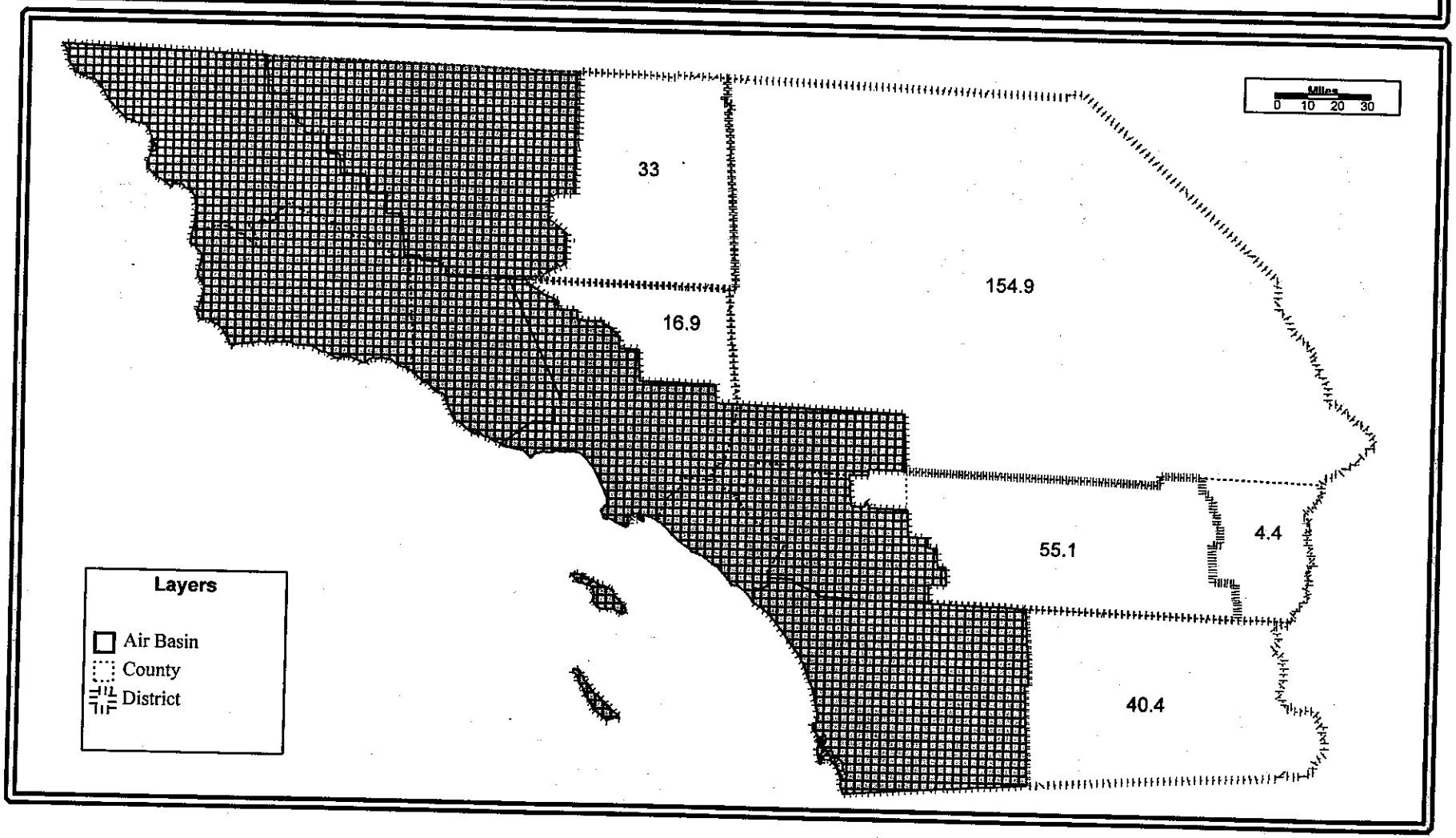


FIGURE 15

## Southeast Desert Air Basin

Reactive Organic Gas (ROG) Emissions in 1993 (Tons per Day)

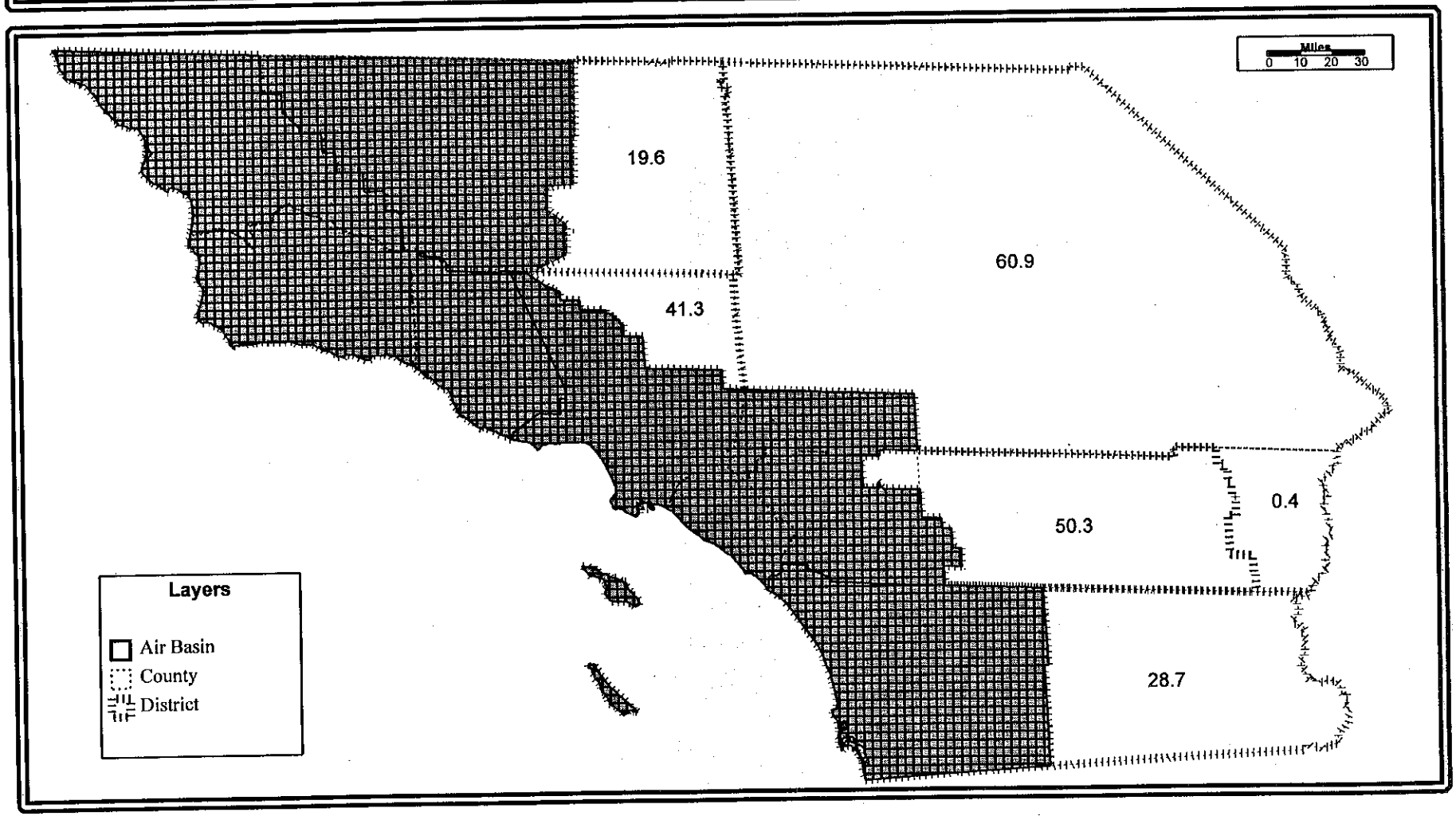
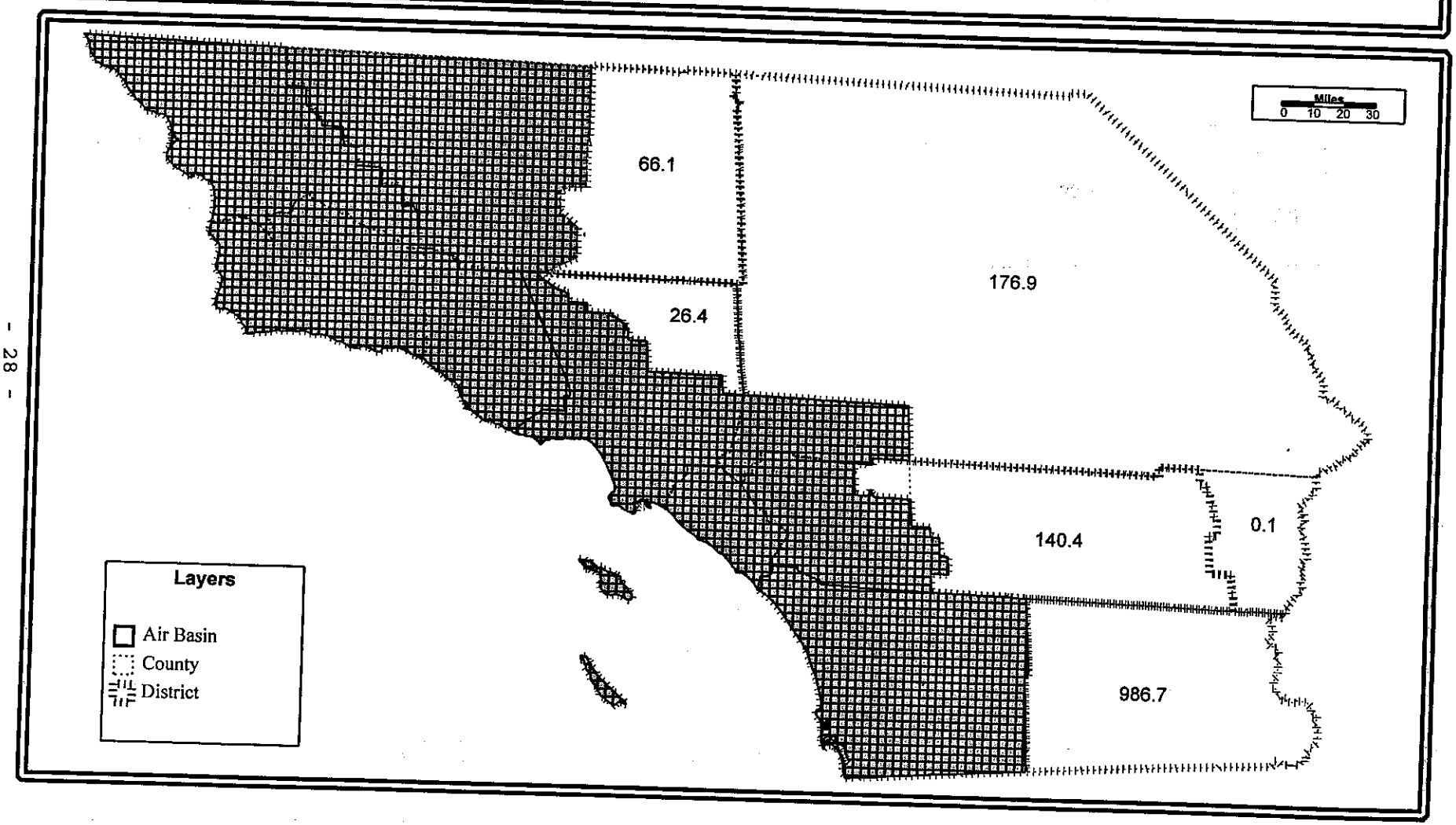


FIGURE 16

# Southeast Desert Air Basin

## Particulate Matter (PM10) Emissions in 1993 (Tons per Day)



# TABLE 2

## 1993 Air Pollutant Emissions in The Southeast Desert Air Basin

(Tons per Annual Average Day)

| County (Segment) Name | NOx Ems. [1.] | ROG Ems. [2.] | PM10 Ems. [3.] |
|---|---|---|---|
| | | | |
| Kern | 33.0 | 19.6 | 66.1 |
| Los Angeles | 16.9 | 41.3 | 26.4 |
| San Bernardino | 154.9 | 60.9 | 176.9 |
| Riverside - Mojave Desert AQMD | 4.4 | 0.4 | 0.1 |
| | | | |
| Riverside - South Coast AQMD | 55.1 | 50.3 | 140.4 |
| Imperial | 40.4 | 28.7 | 986.7 |

1. Oxides of Nitrogen Emissions
2. Reactive Organic Gas Emissions
3. Particulate Matter (PM10) Emissions

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# CHAPTER III

# PROPOSED CHANGES TO THE AIR BASIN BOUNDARIES

This chapter provides a description of the proposed boundary line between the two new air basins, and the rationale for that boundary. It also discusses the considerations in the naming of the second new air basin. Finally, it summarizes the boundaries for the two new air basins and the revised boundary for the South Coast Air Basin.

## A. BOUNDARY LINE BETWEEN THE TWO NEW AIR BASINS

The ARB, under the mandate of Section 39606.1 of the H&SC, must divide the Southeast Desert Air Basin (SEDAB) into two new air basins. As mentioned in Chapter I, Section 39606.1 specifies that one of the new air basins be named the Mojave Desert Air Basin (MDAB) and also specifies its minimum territories. Section 39606.1 authorizes the ARB to add any contiguous areas to the minimum territories of the MDAB that the Board determines by a preponderance of the evidence is appropriate, based on similar meteorological and geographical conditions and consideration for political boundary lines. The staff's search for the most appropriate boundary line to divide the SEDAB into two new air basins follows these guidelines.

It has been shown in Chapter II that the SEDAB is composed of two distinct parts: the High Desert and the Low Desert. It has also been demonstrated that there is a distinguishable difference between the High Desert and the Low Desert in terms of geography, meteorology, ambient air quality, and air pollutant emissions. Therefore, the staff believes that the most appropriate action would be to divide the SEDAB into two new air basins which would coincide with the geographical boundary between the High Desert and the Low Desert, respectively. Thus, it is incumbent upon the staff to identify the geographical line that best separates the Low Desert from the High Desert, in response to the requirements and guidelines of Section 39606.1. Because State law requires that all of the State be divided into air basins, both new air basins would not be restricted to only areas of low elevation but must include the adjacent mountain and foothill areas.

To conform to the requirements of Section 39606.1 that consideration be given to political boundaries, all of the minimum territories specified by Section 39606.1 for the MDAB (i.e., the SEDAB portion of Kern County, the SEDAB portion of Los Angeles County, the SEDAB portion of San Bernardino County, and the Mojave Desert AQMD segment of the SEDAB portion of Riverside County) can be considered to be within the High Desert, and all of Imperial County can be considered to be within the Low Desert. The only area of uncertainty would be the South Coast AQMD segment of the SEDAB portion of Riverside County.

The South Coast AQMD segment of the SEDAB portion of Riverside County contains a low desert valley (Coachella Valley) in the west and both valleys and mountain ranges in the east. The eastern territory, which includes most of the Joshua Tree National Park, is sparsely populated and has a low level of anthropogenic activity. One alternative in drawing the new air basin boundaries would be to regard this eastern territory as a part of the Low Desert. Using this approach would result in the inclusion in the new MDAB of only the minimum territories specified in Section 39606.1, and the inclusion of all of the South Coast AQMD segment of the SEDAB portion of Riverside County into the new air basin that represents the Low Desert, along with all of Imperial County.

However, the staff believes that there are significant differences between the western and eastern territories of the South Coast AQMD segment of the SEDAB portion of Riverside County. The western territory consists primarily of the low desert of Coachella Valley, with elevations ranging from about 250 feet below sea level at the Salton Sea to about 500 feet near Palm Springs; it has a relatively high level of anthropogenic activity through a string of desert communities and their related resort and tourism activities. In contrast, the eastern territory has a mixed terrain of valleys and mountain ranges, with elevations ranging from about 500 feet near the Ford Dry Lakes to 5,000 to 6,000 feet at the summits of the mountains ranges; it has a small population and a low level of anthropogenic activity. In terms of geographical conditions, the eastern territory is more similar to areas in the High Desert than to areas in the Low Desert. Therefore, the staff has determined that it would be more appropriate to include the eastern territory in the MDAB and place the western territory in the air basin for the Low Desert.

The next step for the staff is to determine the exact boundary line that would best serve as a dividing line between the two territories. The staff believes that, in order to facilitate air quality planning efforts, it would be desirable to define the air basin boundary line to coincide with an existing boundary line for an air quality planning area. The staff reviewed the State and Federal planning areas, and found that the Federal ozone and Federal PM10 planning areas for the western territory (or the Coachella Valley) have boundary lines that separate the western territory from the eastern territory. However, while the Federal ozone and PM10 planning areas have similar boundaries, they do <u>not</u> have exactly the same boundaries.

Figure 17 compares the boundaries of the Federal ozone and PM10 planning areas. The ozone planning area boundary follows mainly the township and section lines, while the PM10 planning area boundary is defined in terms of Hydrologic Units. The eastern boundary line of the PM10 planning area within Riverside County is located mostly to the east and north of the eastern boundary line of the ozone planning area. Thus, the PM10 planning area is slightly larger than the ozone planning area. The staff believes that the PM10 boundary is more similar to the concept used in defining air basins than the ozone boundary, because the PM10 planning area's boundary line is based on Hydrologic Units, as discussed below. The staff is not proposing to use the Federal PM10 regulations as the basis for the new air basin boundaries, but only as a means of comparison and illustration.

FIGURE 17

## Southeast Desert Air Basin

Federal Ozone and PM10 Planning Areas

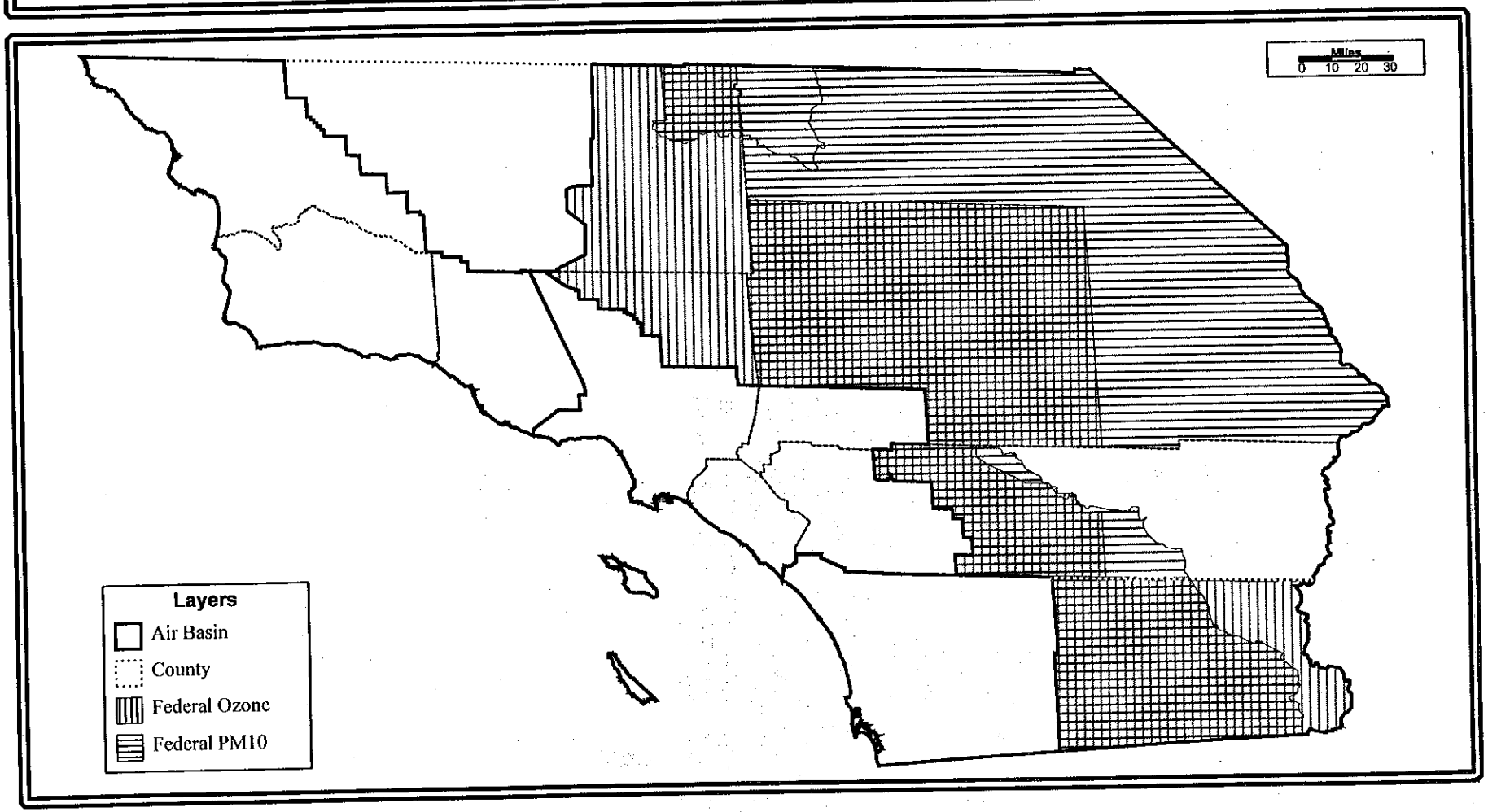


Figure 18 shows the part of the southwestern boundary line of Hydrologic Unit Number 18100100 within Riverside County, which is used as the eastern boundary of the Federal PM10 planning area. This line joins the ridge lines of the Little San Bernardino Mountains and the Chuckwalla Mountains [Ref. 6].

The California Hydrologic Units, compiled and published by the U.S. Geological Survey, are used for water resources planning and related land use planning. The concept of a Hydrologic Unit, that water within a given Hydrologic Unit flows into a common drainage system, is similar to the concept in defining an air basin. Air masses in an air basin are considered as uniform in characteristics due to mixing within the basin. Unlike water, which always flows downhill, air masses could sometimes move upwards and into other air basins. Nevertheless, the staff believes that Hydrologic Unit boundary lines serve well as air basin boundary lines, since the mountain ridges upon which they are defined would also delineate the probable barriers that separate air masses of one region from those of another region.

In summary, the staff proposes that the segment of the SEDAB portion of Riverside County that lies to the <u>east</u> of the southwestern boundary line of Hydrologic Unit Number 18100100 in Riverside County be made a part of the new Mojave Desert Air Basin. This includes both the easterly Mojave Desert AQMD segment and an eastern territory of the South Coast AQMD segment of the SEDAB portion of Riverside County. In addition, the staff proposes that the segment of the SEDAB portion of Riverside County that lies to the <u>west</u> of the southwestern boundary line of Hydrologic Unit Number 18100100 in Riverside County be made a part of the new air basin that represents the Low Desert. The naming of this second new air basin will be discussed in the next section.

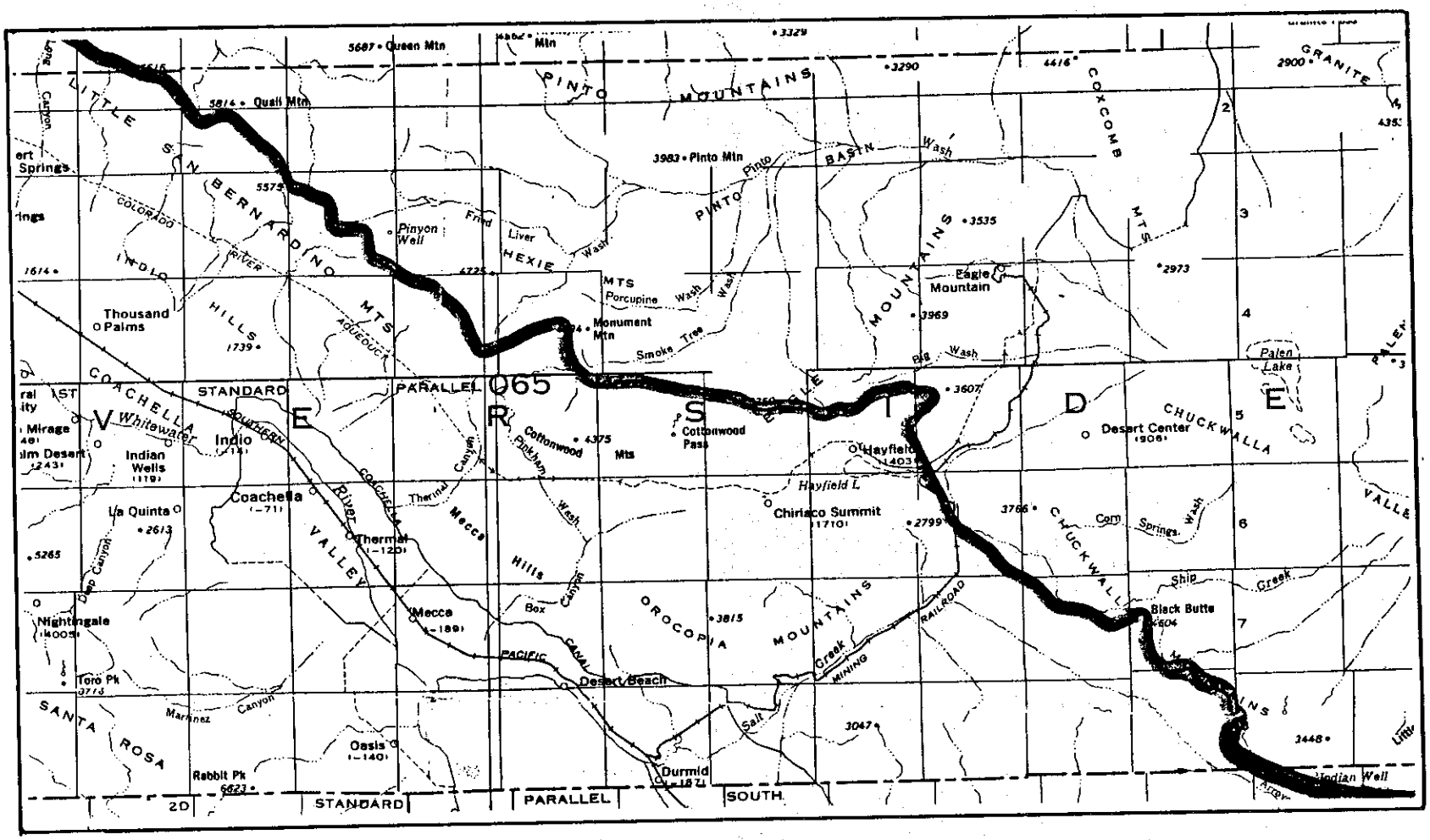
## B. NAMING OF THE NEW AIR BASIN FOR THE LOW DESERT

Section 39606.1 of the H&SC specifies that "Mojave Desert Air Basin" (MDAB) be the name of the new air basin that represents the area which the staff has referred to as the High Desert of the Southeast Desert Air Basin (SEDAB). Section 39606.1 indicates that those areas of the SEDAB that are not included in the MDAB shall remain in the SEDAB. These remaining areas would in effect form a second new air basin that represents the area which the staff has referred to as the Low Desert. Section 39606.1 does not specify a name for this second air basin.

The staff believes that continuing to use the name of Southeast Desert Air Basin to represent the Low Desert could potentially cause ambiguity or confusion. Many of the ARB's programs including, but not limited to, area designations, air quality trends, long range transport, and emission inventories, have been conducted by air basin. Members of the public who use the information from these programs may not be aware that the SEDAB would now represent a different area than previously, and that the information for the new SEDAB could not be compared to that of the former SEDAB. Therefore, in order to alleviate possible confusion by the public between the old and new versions of the SEDAB, the staff believes that it would be appropriate to assign a new name to this air basin in the Low Desert.

**FIGURE 18**

**SOUTHWESTERN BOUNDARY LINE OF HYDROLOGIC UNIT 18100100 IN RIVERSIDE COUNTY**



The name that the staff believes would be the most appropriate for the air basin in the Low Desert is: "Salton Sea Air Basin." Other names considered by the staff included: Colorado Desert Air Basin, Colorado River Air Basin, Lower Desert Air Basin, Desert Sands Air Basin, and Inland Desert Air Basin.

The Salton Sea is a large saline lake located partly in Imperial County and partly in Riverside County, and it separates the Coachella Valley from the Imperial Valley in the Low Desert. It is the largest geographical feature in this proposed air basin, and can be easily found on a map of California. The staff believes that the name "Salton Sea Air Basin" would clearly and uniquely identify this area, compared to generic names such as Lower Desert and Inland Desert which may be associated with more than one area of California.

The proposed name of "Salton Sea Air Basin" is different than the name presented by the staff at a public consultation meeting held at Victorville, California on February 23, 1996. At that meeting, the staff recommended that the second air basin be named the "Colorado Desert Air Basin." However, the staff is not proposing to use this name as it may possibly cause confusion because it contains the name of another state.

In summary, the staff believes that rather than continuing to use the SEDAB name, it would be appropriate to give a new name to the air basin that represents the Low Desert; and the staff has determined that "Salton Sea Air Basin" would be the most suitable name to refer to this air basin. As a result, there would no longer be an air basin called the Southeast Desert Air Basin in California upon adoption of the staff proposal.

## C. NEW AIR BASIN DESCRIPTIONS

This section provides a summary description of the boundaries for the new Mojave Desert Air Basin, the new Salton Sea Air Basin, and the modified South Coast Air Basin. It also provides a map showing the proposed boundaries of these three air basins, and a summary table of the new air basin locations of selected communities in the old SEDAB.

### 1. Mojave Desert Air Basin (MDAB)

The new Mojave Desert Air Basin (MDAB) would consist of the current Southeast Desert Air Basin portions of Kern, Los Angeles, and San Bernardino Counties, and also that segment of Riverside County that lies to the east of the southwestern boundary line of Hydrologic Unit Number 18100100 within Riverside County. This part of the Hydrologic Unit line, generally a northwest-to-southeast line, approximately joins the ridge lines of the Little San Bernardino Mountains and the Chuckwalla Mountains. This boundary line is the same as the eastern boundary line for the Federal PM10 planning area of Coachella Valley in Riverside County. The proposed boundary for the MDAB includes all of the territories specified by Section 39606.1 of the H&SC, plus a central segment of Riverside County that is currently outside of the Mojave Desert Air Quality Management District. The reason for including this additional segment of Riverside County is that this area is determined by the staff to be

more similar, in terms of geography and meteorology, to other areas in the proposed Mojave Desert Air Basin than areas in the proposed Salton Sea Air Basin. This change in air basin boundaries does not change the jurisdiction of any of the air districts in the Southeast Desert Air Basin.

A complete description of the boundaries for the Mojave Desert Air Basin is contained in a proposed amended Section 60109, Title 17, California Code of Regulations (CCR), which previously contained the description for the Southeast Desert Air Basin. The full text of this proposed amended Section is shown in Appendix D.

2. Salton Sea Air Basin (SSAB)

The new Salton Sea Air Basin (SSAB) would consist of all of Imperial County and that segment of the current Southeast Desert Air Basin portion of Riverside County that lies to the west of the southwestern boundary line of Hydrologic Unit Number 18100100 within Riverside County, but not including the San Gorgonio Pass area. This part of the Hydrologic Unit line, generally a northwest-to-southeast line, joins the ridge lines of the Little San Bernardino Mountains and the Chuckwalla Mountains. The segment of Riverside County included in this air basin is approximately the same as the Federal PM10 planning area of Coachella Valley in Riverside County. (The Federal PM10 planning area includes the San Gorgonio Pass area.) Section 39606.1 of the H&SC does not specify a name for this air basin, but the staff believes that assigning a new name would alleviate possible confusion by the public between the old and new versions of the Southeast Desert Air Basin. The name of Salton Sea Air Basin is recommended as the name that would best represent this area of California. This change in air basin boundaries does not change the jurisdiction of any of the air districts in the Southeast Desert Air Basin.

A complete description of the boundaries for the Salton Sea Air Basin is contained in a proposed new Section 60114, Title 17, California Code of Regulations (CCR). A new Section is needed because there are now 15 air basins instead of 14 air basins prior to this proposal. The full text of this proposed new Section is shown in Appendix D.

3. South Coast Air Basin (SOCAB)

As mentioned in Chapter I, the South Coast Air Quality Management District (South Coast AQMD) has requested that the ARB realign air basin boundaries such that the San Gorgonio Pass area of the Southeast Desert Air Basin would become a part of the South Coast Air Basin (SOCAB). A copy of the South Coast AQMD's letter and the supporting data and analysis is provided in Appendix C.

The ARB staff has reviewed the South Coast AQMD's request and believes that the District's rationale for making the San Gorgonio Pass area a part of the SOCAB is reasonable. This is based on the staff's conclusion that the San Gorgonio Pass area, while not completely similar to either the SOCAB or the SEDAB, is relatively more similar to adjacent areas of the SOCAB than to adjacent areas of the SEDAB. Without the South Coast AQMD's request, the San Gorgonio Pass area would be a part of the new Salton Sea Air Basin.

The modified South Coast Air Basin (SOCAB) would consist of all of Orange County, the current SOCAB portions of Los Angeles and San Bernardino Counties, and the current SOCAB portion of Riverside County plus the San Gorgonio Pass area, which is also known as the Banning Pass area. The San Gorgonio Pass area, which is in Riverside County, is already under the jurisdiction of the South Coast AQMD. This change in the SOCAB's boundary does not affect the jurisdiction of the South Coast AQMD or any other air district in the State.

This change in boundary would revise the description for the South Coast Air Basin in Section 60104, Title 17, California Code of Regulations (CCR). The full text of this proposed amended Section is shown in Appendix D.

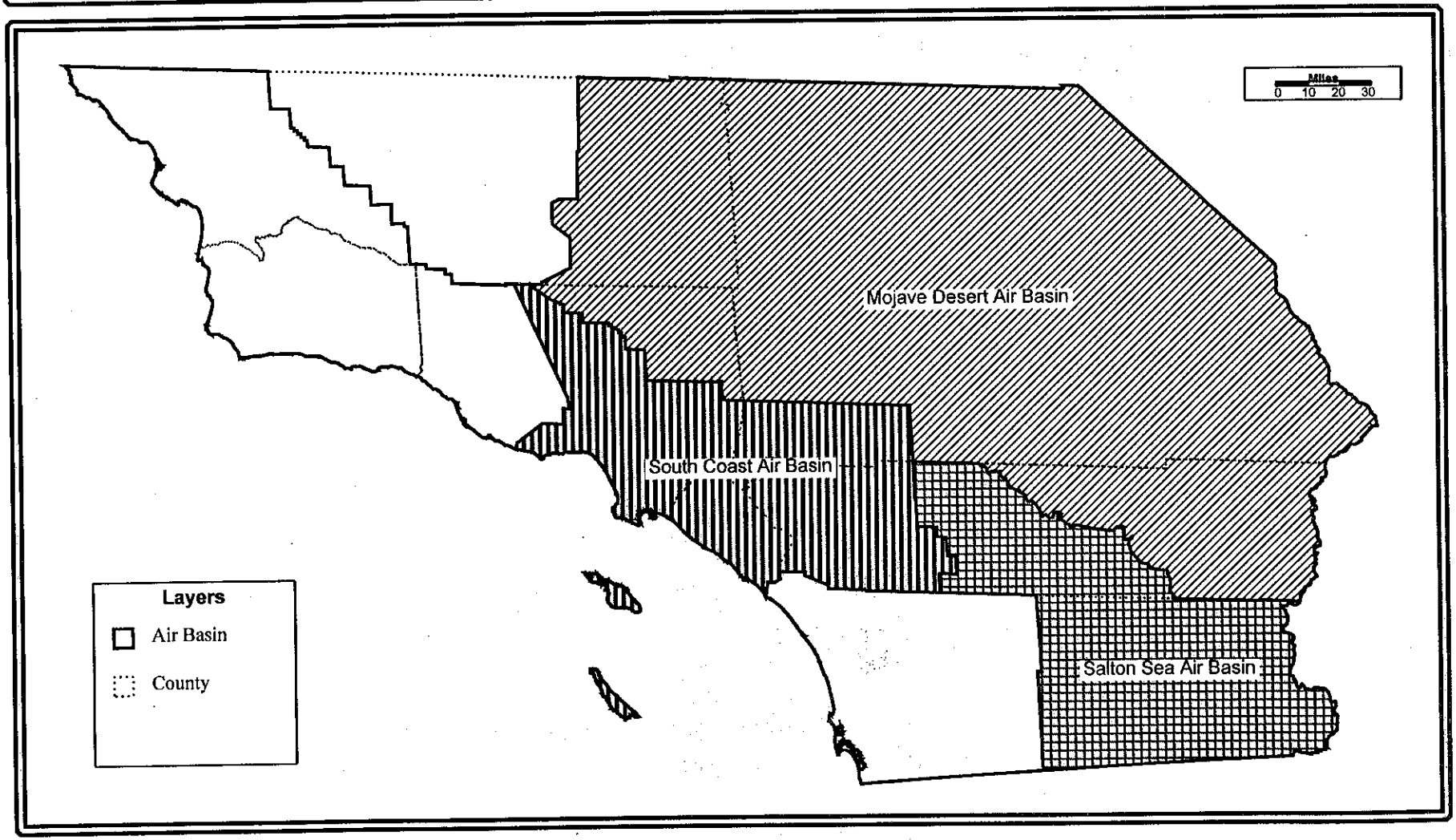
4. Summary of the New Air Basin Boundaries

The proposed boundaries of the new Mojave Desert Air Basin and the new Salton Sea Air Basin, and the revised boundary of the South Coast Air Basin are shown together on the map in Figure 19.

A tabulation of the new air basin locations for selected communities in the previous Southeast Desert Air Basin is given in Table 3. The communities are selected either because they are the major communities in that portion of the county or they are in the vicinity of the new air basin borders. This table would help the general public of the previous SEDAB determine the air basin in which their community would be located upon adoption of the air basin boundary changes.

FIGURE 19

## Proposed Boundaries for Mojave Desert, Salton Sea, and South Coast Air Basins



## TABLE 3

## Change in Air Basin Location for Selected Communities in the Southeast Desert Air Basin (SEDAB)

| Community | New Air Basin Location |
|---|---|
| SEDAB Portion of Kern, Los Angeles, and San Bernardino Counties:<br>All communities | Mojave Desert Air Basin |
| Imperial County:<br>All communities | Salton Sea Air Basin |
| SEDAB Portion of Riverside County: | |
| Cherry Valley<br>Beaumont<br>Banning<br>Cabazon | South Coast Air Basin |
| Palm Springs<br>Desert Hot Springs<br>Indio<br>Chiriaco Summit | Salton Sea Air Basin |
| Eagle Mountain<br>Desert Center<br>Midland<br>Blythe | Mojave Desert Air Basin |

# CHAPTER IV

## PROPOSED CHANGES TO THE AGRICULTURAL BURNING REGULATIONS

If the air basin boundary regulations are amended as proposed, conforming amendments to the ARB's agricultural burning regulations would need to be made. These regulations establish air basin-specific meteorological criteria used for the declaration of permissive burn days in each air basin. Since there would no longer be a Southeast Desert Air Basin, meteorological criteria would not be needed for the SEDAB but instead need to be established for the new Mojave Desert and Salton Sea Air Basins. It was also necessary to determine whether the criteria for the South Coast Air Basin need to be revised because of the change in its boundary.

Most of the agricultural activity in the SEDAB is concentrated in the Imperial Valley and Coachella Valley, and the existing meteorological criteria for the SEDAB are established mainly for these two valleys. Since these two valleys now make up most of the proposed Salton Sea Air Basin (SSAB), the staff proposes that the four meteorological criteria for the SEDAB be used in their entirety for the SSAB without any changes.

For the Mojave Desert Air Basin (MDAB), the staff proposes to also use the existing meteorological criteria for the SEDAB, but delete the criterion regarding the wind direction, namely:

> "(4) The expected daytime wind direction in the mixing layer is not southeasterly."

The above criterion is needed for the Imperial and Coachella Valleys to restrict permissive burns on days when the winds may transport pollutants from across the international border. Since these two valleys are not in the new Mojave Desert Air Basin, this criterion is not appropriate. The other three criteria for the SEDAB would be maintained for use for the MDAB.

The above changes would amend Section 80280, Title 17, California Code of Regulations (CCR), and add a new Section 80311. The full texts of the proposed amended and new Sections are shown in Appendix E.

The staff's review of the meteorological criteria for the South Coast Air Basin has found that the criteria are not affected by the addition of the San Gorgonio Pass area. Therefore, the staff does not propose any changes to the meteorological criteria for the SOCAB.

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# CHAPTER V

## COMMENTS RECEIVED ON THE STAFF PROPOSAL

The staff held a public consultation meeting at Victorville, California on February 23, 1996, to present draft proposals and to obtain comments. The staff received comments at the consultation meeting and also through written communications. A summary of the comments received and the staff's responses is given in this chapter.

At the consultation meeting, a majority of the participants who gave oral comments supported the staff's proposed changes in air basin boundaries and related agricultural burning regulations. Persons speaking in favor of supporting the staff's proposals included three Board members and the Air Pollution Control Officer of the Mojave Desert Air Quality Management District, a representative of Assembly Bill 421's sponsor Assemblyman Olberg, two representatives of the South Coast Air Quality Management District, a representative of the Sierra Club, and a number of consultants and citizens.

There are two major issues that might suggest a deviation from the staff's proposal. The first issue pertains to the Big Bear Lake area, and was raised at the public consultation meeting. The second issue pertains to the City of Banning, and was received via written communications. These two issues are discussed below.

### The Big Bear Lake Area (South Coast Air Basin)

Several participants at the public consultation meeting suggested that the Big Bear Lake area, currently in the South Coast Air Basin (SOCAB), be made a part of the proposed Mojave Desert Air Basin (MDAB). These commenters believed that the Big Bear Lake area is more similar to the MDAB than the SOCAB because of its mountainous terrain and sparse population density. They also believed that the ridge line of the San Bernardino Mountains separates the Big Bear Lake area from the SOCAB, and that the area's air quality is better than that in the SOCAB. A representative of the South Coast AQMD responded that the ambient ozone concentrations at this and other communities in the San Bernardino Mountains are generally among the highest in the SOCAB. Making this area a part of the MDAB would possibly increase the ozone design concentrations for the MDAB, because the ozone concentrations in the MDAB are not as high as those at the mountain communities.

After the meeting, the staff received additional comments in writing from Douglas Mac Iver Consulting, Cushenbury Mine Trust, and the Big Bear Chamber of Commerce. A copy of these written comments is shown in Appendix F. The staff has reviewed these comments and the available information on this issue. The staff does not recommend that the Board make the Big Bear Lake area a part of the MDAB for the following reasons.

First, the Big Bear Lake area is located in the same Hydrologic Unit as the San Bernardino and Riverside metropolitan areas and most of Orange County [Ref. 6]. Thus, the area is in the same watershed as a part of the SOCAB, rather than the MDAB as suggested by the commenters. The geographic features that guide the drainage of water also help to channel the flow of air, although air can also flow over the tops of mountains thus creating transport between air basins.

Second, while the Big Bear Lake area's terrain and population density may be similar to those in the MDAB, the area is more related to the SOCAB in terms of its ambient air quality because it is more of a receptor area of emission sources located in the SOCAB than those in the MDAB. It is appropriate to associate the area, and the responsibility for managing its air quality, with the air basin which contributes the most to its air quality.

Third, the Big Bear Lake area is relatively more similar to the SOCAB than to the SEDAB in terms of geography and meteorology. The area is similar in geography to other mountain communities of the SOCAB such as Crestline, Baldy Village, Lake Arrowhead, and Idyllwild. The area's average annual precipitation is higher than that at most sites in both the SOCAB and the SEDAB. However, the area's precipitation is more similar to that in the SOCAB, where the precipitation is typically in the range of 10 to 15 inches per year, whereas precipitation in the SEDAB is typically below 10 inches per year.

Finally, although there may be valid reasons to support making the Big Bear Lake area a part of the MDAB, there are equally compelling reasons for maintaining it in the SOCAB. The staff believes that, on balance, changing the current boundaries is not warranted at this time.

The City of Banning (Southeast Desert Air Basin)

The staff received from the City of Banning a copy of its City Council's Resolution, No. 1996-24, registering its opposition to making the City of Banning, which is currently in the Southeast Desert Air Basin (SEDAB), a part of the South Coast Air Basin (SOCAB). However, there was no representative of the City of Banning at the public consultation meeting to present oral comments or to discuss this Resolution. A copy of the Resolution is shown as part of Appendix F.

The Resolution states that the City of Banning is opposed to the realignment of the SEDAB and SOCAB boundaries because: (1) The Council members did not receive acceptable answers from the South Coast AQMD staff to questions related to the impacts the proposed realignment would have on potential manufacturers seeking to locate in the City; (2) The Banning Pass area has such unique topographical and meteorological conditions that perhaps Banning should not be in either the SEDAB or the SOCAB but should be in its own air basin; (3) Banning receives much less precipitation than other communities to the west such as Beaumont; this and other meteorological conditions do not lead to the conclusion that Banning

is similar to communities located in the SOCAB; and (4) Lumping Banning with cities in the SOCAB which generate noxious air emissions will stigmatize the City of Banning and will impede its economic development and its ability to lure job creating businesses.

The staff has reviewed the Resolution and has discussed the matter with the staff of the South Coast AQMD, which has jurisdiction over the Banning area regardless of whether there is a realignment of air basin boundaries. The ARB staff recommends that the Board support the South Coast AQMD's realignment request rather than the suggestion by the City of Banning, for the following reasons.

First, the ARB divides the State into air basins by grouping together contiguous areas that have similar geography and meteorology. Generally, air basins comprise one or more counties. It would be neither appropriate nor practical to put a single city in its own air basin, as suggested in the Resolution.

Second, while Banning is within the San Gorgonio Pass which is between the SOCAB and SEDAB, the City itself is located on the SOCAB side of the summits north and south of the Pass. A review of a map of the area shows that Banning is located about eight miles west of a straight line drawn between the summit of the San Gorgonio Mountain and the summit of the San Jacinto Mountain.

Third, although precipitation and other meteorological conditions for Banning may not be exactly the same as either the SOCAB or the SEDAB, the staff believes that the area is more similar to adjacent areas of the SOCAB than adjacent areas of the SEDAB. The adjacent area in the SEDAB is the Coachella Valley, which is much warmer and drier than the Banning area.

Fourth, the air quality in the Banning area is more related to the air quality of the SOCAB than the SEDAB. The Banning area is more impacted by emissions from sources in the SOCAB than by sources in the SEDAB. It would be appropriate to include this area in the air basin more related to the area's air quality.

Finally, the Banning area is more related to the SOCAB demographically and economically than the SEDAB. Most residents in the Banning area work and commute to and from the Los Angeles or Riverside/San Bernardino metropolitan areas of the SOCAB, rather than commuting to and from the Coachella Valley or any other area of the SEDAB. Thus, emissions from transportation sources are related to the SOCAB.

Summary of the Comments Received and the Staff's Responses

In summary, a majority of the comments received supported the staff's proposal. In response to the other comments, the staff recommends that the Board maintain the Big Bear Lake area as a part of the South Coast Air Basin (SOCAB); and the staff recommends that the Board support the South Coast AQMD's request to make the San Gorgonio Pass area a part of the SOCAB, notwithstanding the Resolution by the City of Banning.

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# CHAPTER VI

## ALTERNATIVES TO THE PROPOSED AMENDMENTS

California Health and Safety Code (H&SC) Section 39606(a) requires that the Air Resources Board (ARB) divide the State into air basins based upon similar meteorological and geographical conditions and consideration for political boundary lines whenever practicable. Section 39606.1 of the H&SC further requires that the ARB divide the current Southeast Desert Air Basin (SEDAB) into two air basins.

The staff has considered the following alternatives to the proposed amendments to the Southeast Desert Air Basin boundaries:

(1) No action: This alternative is not feasible because Section 39606.1 of the H&SC mandates that the ARB divide the SEDAB into new air basins.
(2) Inclusion in the new Mojave Desert Air Basin (MDAB) the minimum territories specified in Section 39606.1: This alternative is not as appropriate because the proposed additional area in Riverside County is contiguous to the minimum territories and has been determined by the staff, in accordance with the authority given by Section 39606.1, to be similar in geography and meteorology to the mandated territories of the MDAB.
(3) Use of other boundary lines to be the border between the two new air basins: The proposed boundary line has been determined by the staff to be the most appropriate because it is based on Hydrologic Units which are similar in concept to air basins, whereas other boundary lines such as the Federal ozone planning area do not have any such similar basis.

The staff has considered the following alternative to the proposed amendments to the South Coast Air Basin (SOCAB) boundaries:

(1) No action: This alternative is not appropriate because the staff agrees that the rationale set forth by the South Coast Air Quality Management District is reasonable and supports a determination that the San Gorgonio Pass area is more similar in geography and meteorology to other areas in the SOCAB than to areas in the SEDAB.

The staff has considered the following alternative to the proposed amendments to the agricultural burning regulations:

(1) No action: This alternative is not feasible because the air basin boundary changes are mandated by Section 39606.1; and since the agricultural burning regulations specify meteorological criteria on an air basin-specific basis, the regulations must be updated to reflect the change in air basins.

In summary, the staff has considered reasonable alternatives to the proposed amendments to both the air basin boundary regulations and agricultural burning regulations, and has found that in each case none of the alternatives is more appropriate than the proposed amendments.

# CHAPTER VII

# IMPACTS OF THE PROPOSED AMENDMENTS

## A. PUBLIC HEALTH AND WELFARE IMPACTS

The staff's proposal to divide the Southeast Desert Air Basin (SEDAB) into two air basins is not expected to result in any adverse impacts on public health and welfare. The staff believes that because of the differences between the High Desert and Low Desert areas of the SEDAB in terms of geography and meteorology, the division of the SEDAB into two air basins would help separate the causes and origins of the air quality problems of the two areas, which would in turn assist the ARB and air districts of the State in developing solutions to those air quality problems. Thus, the proposed new air basins would be expected to indirectly result in producing environmental benefits in terms of better air quality rather than causing adverse environmental impacts.

The staff's proposal to make the San Gorgonio Pass area of the SEDAB a part of the South Coast Air Basin (SOCAB) is not expected to result in any significant adverse impacts on public health and welfare. Because of the similarity of the San Gorgonio Pass to the SOCAB, air quality data for this area are appropriately used with data from other sites in the SOCAB to represent air quality in the SOCAB. The design values for the State ambient air quality standards for the new Mojave Desert Air Basin (MDAB) and Salton Sea Air Basin (SSAB) would be based on data from the monitoring sites within their respective air basins. The South Coast Air Quality Management District stated that its review of permitted facilities showed that only small emitters are present in the San Gorgonio Pass area, with the largest facility emitting less than four tons per year. The change in air basin location has no effect on the jurisdiction which the South Coast AQMD already has over the San Gorgonio Pass. The District further stated, "The impact on the two cities in the San Gorgonio Pass area from the various South Coast AQMD programs (RECLAIM, New Source Review) as a result of changing the air basin in which the area is located is expected to be minimal." [see Appendix C]

The staff's proposal to amend the agricultural burning regulations is not expected to result in any adverse impacts on public health and welfare. The meteorological criteria for the new SSAB are exactly the same as the criteria for the previous SEDAB. The criteria for the new MDAB are nearly the same as the criteria for the SEDAB, the only change being the deletion of a criterion which does not apply to the MDAB. The staff does not expect these amendments to cause any change in the number of permissive burn days that would be declared in these air basins.

## B. ECONOMIC IMPACTS

The proposed amendments to divide the Southeast Desert Air Basin (SEDAB) and to modify the boundary of the South Coast Air Basin (SOCAB) by themselves do not contain requirements for action. Subsequent requirements for action may result after additional steps, such as plan preparation and approval, are taken. The change in air basin boundaries would help better define areas with similar geographical and meteorological characteristics and air quality. Therefore, there are no adverse impacts on public health and welfare, as mentioned in section A above, and there are no costs associated with such impacts.

The proposed amendments to the agricultural burning regulations arise from the need to update them to correspond to the changes in the air basin boundaries. Since the changes to the meteorological criteria in these regulations are minimal, there will not be any additional costs incurred by the amendments to the agricultural burning regulations.

The Executive Officer has determined that adoption of the proposed amendments will not create costs or savings, as defined in Government Code Section 11346.5(a)(6), to any State agency or in federal funding to the State, costs or mandate to any local agency or school district whether or not reimbursable by the State pursuant to Part 7 (commencing with Section 17500), Division 4, Title 2 of the Government Code, or other nondiscretionary savings to local agencies.

The Executive Officer also has determined, in accordance with Government Code Section 11346.5(a)(8), that adoption of the proposed amendments will not have a significant adverse economic impact on businesses, including the ability of California businesses to compete with businesses in other states, and in accordance with Government Code Section 11346.5(a)(3), will not affect small businesses, except as discussed below. Finally, the Executive Officer has determined that there will be no, or an insignificant, potential cost impact, as defined in Government Code Section 11346.5(a)(9), on private persons or businesses directly affected as a result of adopting the proposed amendments.

The realignment of air basin boundaries so that the San Gorgonio Pass area, currently a part of the SEDAB, would become a part of the South Coast Air Basin (SOCAB), is expected to have only minimal economic impact on the sources currently in the area. All sources currently in the San Gorgonio Pass area are smaller than the level that would cause them to meet the more stringent emission regulations for sources in the SOCAB with respect to the Federal Title V permits, New Source Review offset ratios, and Best Available Control Technology adjustment. Upon being a part of the SOCAB, eligible sources in the San Gorgonio Pass would have the option, but not the obligation, to participate in the South Coast AQMD's market incentive-based emission reduction program called RECLAIM. This may in fact act as an incentive for new businesses to locate in the San Gorgonio Pass area, because of the flexibility the RECLAIM program provides. If any of the current sources in the San Gorgonio Pass should expand, there may be a possible economic impact. However, this potential impact

currently cannot be quantified by the staff because any additional cost would depend on the level of expansion and the types and amounts of emissions from the expansion.

In accordance with Government Code Section 11346.3, the Executive Officer has determined that adoption of the proposed amendments will not affect the creation or elimination of jobs within the State of California, the creation of new businesses or the elimination of existing businesses within California, or the expansion of businesses currently doing business within California.

Before taking final action on the proposed amendments to the regulations, the Board must determine that no alternative considered by the agency would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action (Government Code Section 11346.5(a)(12)).

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# CHAPTER VIII

## DOCUMENTS RELIED UPON

The following is a list of documents which the staff used in developing the proposed amendments and made reference to in the text of this Staff Report:


1. Climate of the Southeast Desert Air Basin, Division of Technical Services, California Air Resources Board, Sacramento, California (July 1975).

2. Climatological Data Annual Summary, California, 1994, Volume 98, Number 13, National Climatic Data Center, Asheville, North Carolina (1995).

3. Climatography of the United States, # 20, Climatic Summaries for Selected Sites, 1951-1980, California, National Climatic Data Center, Asheville, North Carolina (1985).

4. California Air Quality Data, Summary of 1993 Air Quality Data, Gaseous and Particulate Pollutants, (available annually for calendar years through 1993), Technical Support Division, California Air Resources Board, Sacramento, California (1994).

5. Maps and Tables of the Area Designations for State and National Ambient Air Quality Standards and Expected Peak Day Concentrations and Designation Values, Technical Support Division, California Air Resources Board, Sacramento, California (January 1996).

6. Hydrologic Unit Map, 1978, State of California (Southern Half), Department of the Interior, Geological Survey, Reston, Virginia (Reprinted 1987).

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# APPENDIX A

## RELEVANT SECTIONS OF THE HEALTH AND SAFETY CODE

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## APPENDIX A

## RELEVANT SECTIONS OF THE HEALTH AND SAFETY CODE

Section 39606.

The state board shall:

(a) Based upon similar meteorological and geographic conditions and consideration for political boundary lines whenever practicable, divide the state into air basins to fulfill the purposes of this division.

Section 39606.1.

(a) On or before January 1, 1997, the state board shall adopt regulations to designate, and determine the boundaries of, an air basin known as the Mojave Desert Air Basin. The air basin shall have a territory that is based upon similar meteorological and geographical conditions and consideration for political boundary lines. The air basin shall consist of at least all of the following:

(1) The desert portions of Los Angeles County that, immediately prior to the date of the adoption of the regulations, were within the Southeast Desert Air Basin.

(2) The desert portions of Kern County that, immediately prior to the date of the adoption of the regulations, were within the Southeast Desert Air Basin.

(3) Any portion of the Mojave Desert Air Quality Management District that, immediately prior to the date of the adoption of the regulations, was within the Southeast Desert Air Basin.

(4) Any other area contiguous to the areas indicated in paragraphs (1) to (3), inclusive, that the state board determines by a preponderance of the evidence is appropriate for inclusion.

(b) Areas that, immediately prior to the date of the adoption of the regulations, were within the Southeast Desert Air Basin and are not included in the Mojave Desert Air Basin shall remain in the Southeast Desert Air Basin, subject to Section 39606.

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# APPENDIX B

## TEXT OF

## ASSEMBLY BILL 421

## (OLBERG)

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Assembly Bill No. 421

CHAPTER 113

An act to amend Section 41200 of, and to add Section 39606.1 to, the Health and Safety Code, relating to air pollution.

[Approved by Governor July 17, 1995. Filed with Secretary of State July 18, 1995.]

LEGISLATIVE COUNSEL'S DIGEST

AB 421, Olberg. Air pollution: air basins.

Existing law requires the State Air Resources Board to divide the state into air basins for purposes of the air pollution control laws. Existing law contains findings and declarations that the Mojave Desert region is a geographical and meteorological area wholly contained within the Southeast Desert Air Basin. Existing state board regulations designate the Southeast Desert Air Basin as containing all of Imperial County and specified portions of Riverside, San Bernardino, Los Angeles, and Kern Counties. Existing law establishes the Mojave Desert Air Quality Management District consisting of that portion of the County of San Bernardino which is not in the South Coast Air Quality Management District, and authorizes the inclusion in the Mojave Desert district of any other contiguous territory, as specified.

This bill would require the state board to adopt regulations by January 1, 1997, to designate an air basin known as the Mojave Desert Air Basin and to determine its territory, to include specified portions of the current Southeast Desert Air Basin. The bill would revise the above-described findings and declarations accordingly.

*The people of the State of California do enact as follows:*

SECTION 1. Section 39606.1 is added to the Health and Safety Code, to read:

39606.1. (a) On or before January 1, 1997, the state board shall adopt regulations to designate, and determine the boundaries of, an air basin known as the Mojave Desert Air Basin. The air basin shall have a territory that is based upon similar meteorological and geographical conditions and consideration for political boundary lines. The air basin shall consist of at least all of the following:

(1) The desert portions of Los Angeles County that, immediately prior to the date of the adoption of the regulations, were within the Southeast Desert Air Basin.

(2) The desert portions of Kern County that, immediately prior to the date of the adoption of the regulations, were within the Southeast Desert Air Basin.

(3) Any portion of the Mojave Desert Air Quality Management District that, immediately prior to the date of the adoption of the regulations, was within the Southeast Desert Air Basin.

(4) Any other area contiguous to the areas indicated in paragraphs (1) to (3), inclusive, that the state board determines by a preponderance of the evidence is appropriate for inclusion.

(b) Areas that, immediately prior to the date of the adoption of the regulations, were within the Southeast Desert Air Basin and are not included in the Mojave Desert Air Basin shall remain in the Southeast Desert Air Basin, subject to Section 39606.

SEC. 2. Section 41200 of the Health and Safety Code is amended to read:

41200. The Legislature finds and declares as follows:

(a) The Mojave Desert region has serious air pollution problems caused by the transport of air pollution from upwind districts and by the operation of growing numbers of motor vehicles and numerous stationary sources, and atmospheric and meteorological conditions which are conducive to the formation of a variety of air pollutants.

(b) To effectively control air pollution within the region pursuant to the requirements of state and federal law, it is necessary to establish an institutional structure which reflects the demographic and political makeup of the region.

(c) To successfully achieve required improvements in air quality and the protection of existing levels of air quality within the region, there is a need for greater coordination between air quality management decisions and the land use and transportation decisions of local governments in the region.

(d) To successfully develop and implement a comprehensive program for the attainment and maintenance of state and federal ambient air quality standards, local governments in the region must be delegated additional authority and responsibility from the state, particularly with respect to reducing motor vehicle emissions and expanding the use of cleaner burning alternative fuels.

O

# APPENDIX C

## LETTER FROM THE

## SOUTH COAST

## AIR QUALITY MANAGEMENT DISTRICT

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MHS

DEC 0 4 1995

DEC 19 1995

South Coast
Air Quality Management District

AQMD

21865 E. Copley Drive, Diamond Bar, CA 91765-4182 (909) 396-2000

*Office of the Executive Officer*
*James M. Lents, Ph.D.*

*November 29, 1995*

James D. Boyd
Executive Officer
Air Resources Board
2020 L Street
Sacramento CA 95814

RE: Request to Realign the Boundary Between the South Coast Air Basin and the Southeast Desert Air Basin in the Vicinity of San Gorgonio Pass

Dear Mr. Boyd: Jim

Currently the San Gorgonio Pass area (also known as the Banning Pass area) is included within the boundaries of the Southeast Desert Air Basin (SEDAB). This small region in Riverside County includes the incorporated cities of Banning and Beaumont, and is one of three major routes by which air pollutants are transported out of the South Coast Air Basin (SOCAB). The other two are Cajon Pass and the Santa Clarita Valley. While the SCAQMD's Santa Clarita air monitoring station is within the SOCAB, the Banning air monitoring station is considered to be within the SEDAB, and as such is a significant determinant for the ozone attainment status of the entire SEDAB.

Our analysis of meteorological conditions in the San Gorgonio Pass area reveals that such conditions are more typical of the SOCAB than of SEDAB. Hence it would make more sense to incorporate the San Gorgonio Pass area into the SOCAB, as was done in the case of the Santa Clarita area.

PROPOSAL

The South Coast Air Quality Management District requests that the San Gorgonio Pass area, District area 29, be included within the South Coast Air Basin.

BACKGROUND

Legal Requirement

The Air Resources Board is directed by the California Health and Safety Code Section 39606(a) to divide the state into air basins based upon "similar meteorological and geographic conditions and consideration for political boundary lines whenever practicable". Modification of the current boundary should be considered based on this guidance. The boundary lines of the Southeast Desert Air Basin are defined in the California Code of Regulations, paragraph 60109, and currently include the San Gorgonio Pass, or Banning Pass, area (Attachment A, area 29).

Topography and Meteorology

Geographically and meteorologically San Gorgonio Pass is more similar to adjacent areas of the South Coast Air Basin than to adjacent areas of the Southeast Desert Air Basin. The elevation at Banning in the San Gorgonio Pass is about 2300 feet and the eastern edge of the San Gorgonio Pass is at about 1400 feet, compared to about 1300 feet at Redlands in the SOCAB and 200 feet at Palm Springs in the SEDAB. The temperature and rainfall in the San Gorgonio Pass are, like those of the neighboring SOCAB communities of Redlands, Riverside, and San Bernardino, characteristic of areas classified climatically as steppe. The climate in San Gorgonio Pass differs significantly from neighboring communities in the SEDAB such as Palm Springs, which is classified as desert. (See Attachment B.)

Implications

If the San Gorgonio Pass area is included in the South Coast Air Basin, the pollutant design values for the Southeast Desert Air Basin can, and should, be based more correctly on the desert air monitoring sites. A review of permitted facilities in this area indicates only small emitters are present, with the largest facility emitting less than four tons per year. The impact on the two cities in the San Gorgonio Pass area from the various SCAQMD programs (RECLAIM, New Source Review) as a result of changing the air basin in which the area is located is expected to be minimal. The possibility of including these communities in the South Coast Air Basin has been discussed with local city officials.

RECOMMENDATION

We therefore recommend that the Air Resources Board, under the authority granted it in Health and Safety Code Section 39606(a), remove the San Gorgonio Pass area (Attachment A, area 29) from the Southeast Desert Air Basin and add it to the South Coast Air Basin.

Sincerely,

Acting Executive Officer
James M. Lents, Ph.D.
Executive Officer

BRW:CL:MZ:MH

Attachments:

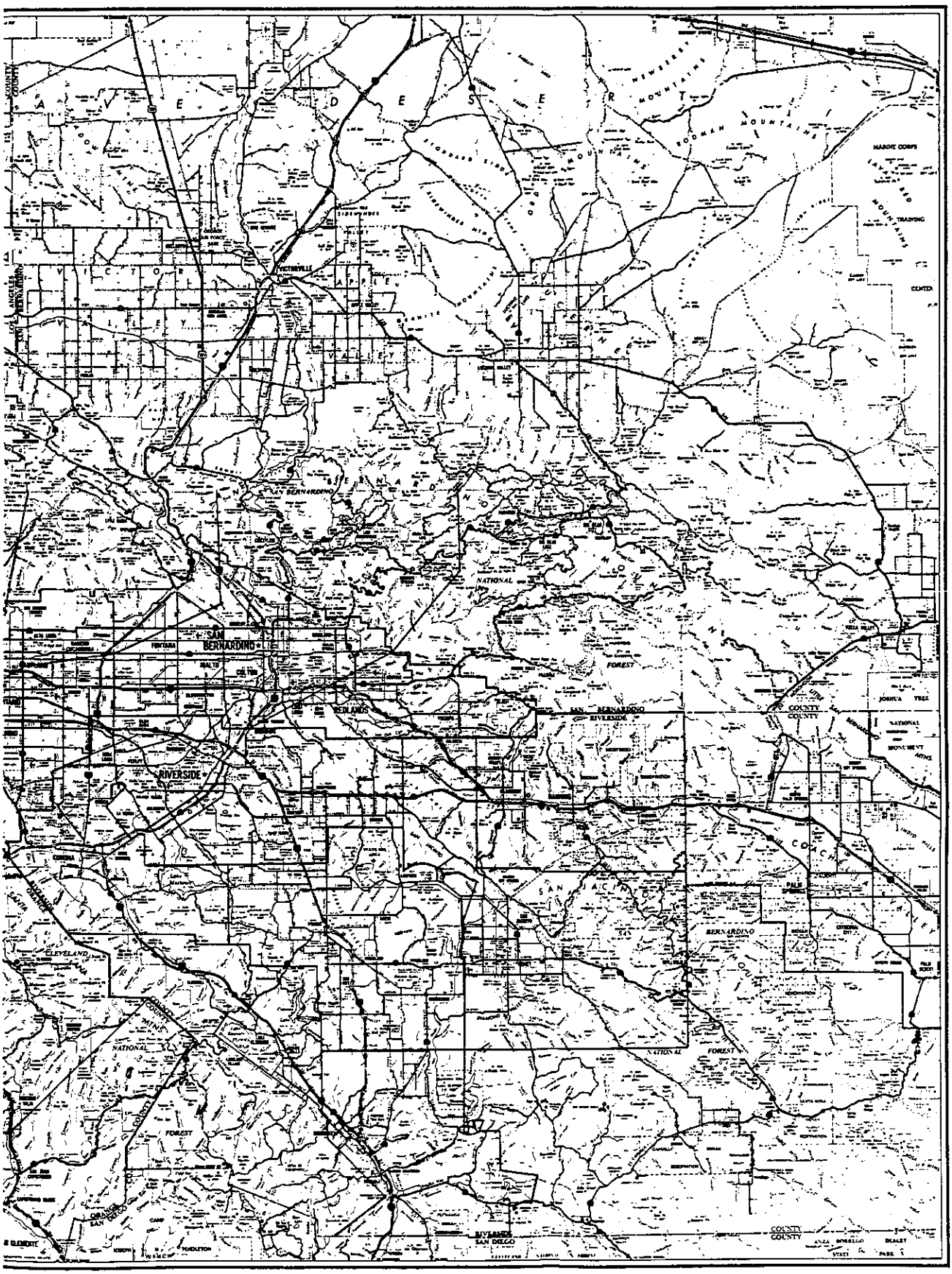
A. South Coast Air Quality Management District and Air Monitoring Areas

B. Climate of San Gorgonio Pass (Banning Pass): Comparisons to the South Coast and Southeast Desert Air Basins

(ltr1014.doc)

cc: Supervisor Roy Wilson, Governing Board Member
Mayor Ronald Loveridge, Governing Board Member

## ATTACHMENT A



## Attachment B

## Climate of San Gorgonio Pass (Banning Pass): Comparisons to the South Coast and Southeast Desert Air Basins

### General Descriptions

San Gorgonio Pass

San Gorgonio Pass, or Banning Pass, is a canyon in northwestern Riverside County connecting the South Coast Air Basin (SoCAB) to the Southeast Desert Air Basin (SEDAB). It runs in an east-west direction for about 15 miles and is about 5 miles wide. The pass starts west of Beaumont at an elevation of about 2200 feet and reaches a maximum elevation of around 2600 feet in the city of Beaumont, then drops to an elevation of near 1400 feet between Cabazon and White Water. The San Bernardino Mountains are on the north side of the pass and the San Jacinto Mountains are on the south side. The San Bernardino Mountains reach a maximum elevation of 11,502 feet at the top of San Gorgonio Mountain and the San Jacinto Mountains reach a maximum elevation of 10,804 feet at Mt. San Jacinto.

South Coast Air Basin

The SoCAB consists of the non-desert portions of Los Angeles, Riverside and San Bernardino Counties and all of Orange County. It is bounded on the west by the Pacific Ocean, on the north and east by the San Gabriel, San Bernardino and San Jacinto Mountains and on the south by the San Diego County line. The SoCAB is primarily a coastal plain with connecting broad valleys and low hills surrounded by the Pacific Ocean and mountain ranges. Elevations vary from sea level along the coast to 11,502 feet on top of San Gorgonio Mountain.

Southeast Desert Air Basin

The SEDAB consists of the desert areas of Los Angeles, Riverside, San Bernardino, and Kern Counties and all of Imperial County. Numerous mountain ranges form the western boundary running from Kern County to the Mexican border. The northern half of the SEDAB is primarily the Mojave Desert with most of the area at an elevation exceeding 2000 feet. There are some hills and mountains dividing the Mojave Desert into various valleys. The southern half of the SEDAB is generally less than 1000 feet in elevation with a few hilly areas above 1000 feet. The Coachella and Imperial Valleys occupy a large portion of the southern SEDAB, with much of the terrain below sea level. The Salton Sea area has the lowest elevation, at about 230 feet below sea level.

### Climate

Climatic data[1,2] for Beaumont, the eastern portion of SoCAB (including Redlands, Riverside, and San Bernardino), and the SEDAB (including Palm Springs, Daggett, Imperial, Palmdale, and Victorville) was analyzed for comparison. Average monthly and annual precipitation totals are presented in Table 1. Average maximum and mean temperatures are shown in Table 2 and Table 3, respectively.

As shown in Table 1, all of the stations analyzed receive most of their annual rainfall during the months of November through April. This is true for all of Southern California however, the variation in total annual precipitation is significantly impacted by air basin. Beaumont's annual precipitation is 230 percent of that for Palmdale, which has the highest annual precipitation of the SEDAB stations listed. Beaumont receives 327 percent of the annual precipitation for Palm Springs which is the closest SEDAB station to Beaumont. Clearly, based on precipitation, Beaumont does not have the same climate as that of the SEDAB. Beaumont's precipitation fits more closely into the pattern found in the SoCAB than the SEDAB. Beaumont receives more precipitation than most areas of the SoCAB because of orographic effects of the surrounding mountains.

The average maximum and mean temperatures from Table 2 and Table 3, respectively, reveal that Beaumont temperatures are much cooler than those of the low elevation stations of SEDAB. Similarities exist in annual average temperature between Beaumont and cities in both the eastern portion of SoCAB and the high elevation regions of SEDAB. Therefore, temperature can not be used to distinguish a difference in climate between Beaumont and SEDAB or SoCAB.

Koeppen Classification

The climate of a region can be classified using the Koeppen classification of climates. Since Southern California has an arid to semiarid climate, only the equation identifying steppe (semiarid) and desert (arid) climates will be addressed. Using only precipitation and temperature data, it can be determined what Koeppen precipitation boundary separates a desert from a steppe climate. The equation[3,4] used for areas having winter rain and summer drought is:

$$\text{Precipitation (Inches)} = 0.22 * (\text{Mean Annual Temperature}) - 7.$$

Table 4 shows the resulting Koeppen precipitation classification boundaries for each location, compares it to the annual precipitation from Table 1, and list the Koeppen classification. All the desert locations ended up with a Koeppen classification of desert except Palmdale. Palmdale exceeds the desert climate precipitation boundary by only 0.74 inch and should be considered marginally desert for this report. Climatic stations just a few miles to the north of Palmdale receive about 2 inches less annual precipitation. Beaumont and the SoCAB stations all ended up with a steppe climate. Beaumont exceeds the calculated desert precipitation boundary by an amount greater than the SoCAB stations exceed their boundaries.

**Summary**

An analysis of the temperature, precipitation, and calculated Koeppen climate classification was done for Beaumont, the eastern portion of the SoCAB, and the SEDAB. The results of the precipitation analysis show that Beaumont has a precipitation pattern very similar to that of the SoCAB and very much different than that of the SEDAB. The temperature analysis results were not conclusive. The Koeppen climate classification, which is based on both precipitation and temperature, clearly shows that Beaumont does not have a desert climate and that it is wetter than nearby SoCAB stations. Beaumont, therefore, should be considered a part of the SoCAB and not a part of the SEDAB.

**References**


1. National Oceanic and Atmospheric Administration, "Climatography of the United States No. 81, Monthly Normals of Temperature, Precipitation, and Heating and Cooling Degree Days 1951-80, California", Asheville, N.C., September 1982.

2. State of California Air Resources Board, "Climate of the Southeast Desert Air Basin", July 1975.

3. Trewartha, Glenn T., "An Introduction to Climate", McGraw-Hill, 1968.

4. Berry, Jr, F. A., Bollay, E., and Beers, Norman R., "Handbook of Meteorology", McGraw-Hill, 1973.

## TABLE 1

## AVERAGE MONTHLY PRECIPITATION (INCHES)

| Station | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Beaumont: | 3.56 | 3.07 | 2.90 | 1.51 | 0.63 | 0.11 | 0.16 | 0.15 | 0.44 | 0.52 | 1.75 | 2.20 | 17.00 |
| Palm Springs: | 1.26 | 0.75 | 0.55 | 0.17 | 0.08 | 0.03 | 0.23 | 0.23 | 0.36 | 0.16 | 0.62 | 0.76 | 5.20 |
| Redlands: | 2.79 | 2.20 | 2.12 | 1.17 | 0.49 | 0.07 | 0.10 | 0.15 | 0.41 | 0.37 | 1.33 | 1.69 | 12.89 |
| Riverside: | 2.17 | 1.77 | 1.55 | 0.86 | 0.23 | 0.03 | 0.08 | 0.14 | 0.31 | 0.20 | 1.00 | 1.30 | 9.64 |
| San Bernardino: | 3.49 | 2.77 | 2.50 | 1.32 | 0.54 | 0.08 | 0.04 | 0.13 | 0.49 | 0.52 | 1.62 | 2.18 | 15.68 |
| Daggett: | 0.56 | 0.36 | 0.35 | 0.27 | 0.09 | 0.08 | 0.32 | 0.50 | 0.44 | 0.17 | 0.28 | 0.39 | 3.81 |
| Imperial: | 0.42 | 0.24 | 0.22 | 0.11 | 0.01 | 0.00 | 0.10 | 0.31 | 0.26 | 0.21 | 0.23 | 0.29 | 2.40 |
| Palmdale: | 1.73 | 1.29 | 1.05 | 0.53 | 0.15 | 0.03 | 0.04 | 0.15 | 0.23 | 0.23 | 0.94 | 1.01 | 7.38 |
| Victorville: | 0.97 | 0.83 | 0.68 | 0.33 | 0.15 | 0.05 | 0.11 | 0.18 | 0.36 | 0.22 | 0.55 | 0.57 | 5.00 |

## TABLE 2

## AVERAGE MAXIMUM TEMPERATURE (Degrees F)

| Station | Jan | Apr | Jul | Oct | Annual |
|---|---|---|---|---|---|
| Beaumont: | 60 | 71 | 96 | 80 | 76 |
| Palm Springs: | 69 | 86 | 109 | 92 | 89 |
| Redlands: | 65 | 74 | 96 | 82 | 79 |
| Riverside: | 66 | 75 | 94 | 83 | 79 |
| San Bernardino: | 66 | 75 | 98 | 84 | 80 |
| Daggett: | 61 | 78 | 104 | 83 | 81 |
| Imperial: | 69 | 85 | 107 | 91 | 88 |
| Palmdale: | 59 | 73 | 98 | 81 | 77 |
| Victorville: | 58 | 72 | 98 | 80 | 77 |

## TABLE 3

## MEAN TEMPERATURE (Degrees F)

| Station | Jan | Apr | Jul | Oct | Annual |
|---|---|---|---|---|---|
| Beaumont: | 49 | 56 | 77 | 65 | 61 |
| Palm Springs: | 55 | 69 | 92 | 75 | 72 |
| Redlands: | 52 | 60 | 78 | 67 | 64 |
| Riverside: | 53 | 61 | 77 | 67 | 64 |
| San Bernardino: | 53 | 61 | 79 | 68 | 65 |
| Daggett: | 48 | 64 | 89 | 69 | 67 |
| Imperial: | 56 | 70 | 92 | 76 | 73 |
| Palmdale: | 45 | 58 | 81 | 64 | 62 |
| Victorville: | 44 | 57 | 80 | 63 | 60 |

## TABLE 4

## KOEPPEN PRECIPITATION CLASSIFICATION

| Station | Inches | Table 1 Difference | Climate |
|---|---|---|---|
| Beaumont: | 6.42 | +10.58 | Steppe |
| Palm Springs: | 8.84 | -3.64 | Desert |
| Redlands: | 7.08 | +5.81 | Steppe |
| Riverside: | 7.08 | +2.56 | Steppe |
| San Bernardino: | 7.30 | +8.38 | Steppe |
| Daggett: | 7.74 | -3.93 | Desert |
| Imperial: | 9.06 | -6.66 | Desert |
| Palmdale: | 6.64 | +0.74 | Desert/Steppe |
| Victorville: | 6.20 | -1.20 | Desert |

# APPENDIX D

## TEXT OF

## PROPOSED AMENDMENTS TO THE

## AIR BASIN BOUNDARY REGULATIONS

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**APPENDIX D**

**TEXT OF**
**PROPOSED AMENDMENTS TO THE**
**AIR BASIN BOUNDARY REGULATIONS**

CALIFORNIA CODE OF REGULATIONS (CCR), TITLE 17,
SECTIONS 60104 AND 60109, AND NEW SECTION 60114

Note: The text of Section 60109 is as adopted by the Board on November 16, 1995, but has not yet been approved by the Office of Administrative Law.

(Additions are shown as *italicized/underlined* and deletions are shown as ~~strikeout~~)

**Section 60104.**
**South Coast *Air* Basin.**

(a) All of Orange County
(b) That portion of Riverside County which lies west of a line described as follows:

Beginning at the Riverside-San Diego County boundary and running north along the range line common to R. 4 E and R. 3 E; then east along the township line common to T. 8 S and T. 7 S; then north along the range line common to R. 5 E and R. 4 E; then west along the township line common to T. 6 S and T. 7 S to the southwest corner of Section 34, T. 6 S, R. 4 E; then north along the west boundaries of Sections 34, 27, 22, 15, 10, 3, T. 6 S, R. 4 E; then west along the township line common to T. 5 S and T. 6 S; then north along the range line common to R. 4 E and R. 3 E; then west along the south boundaries of Sections 13, 14, 15, 16, 17 and 18, T. 5 S. R. 3 E; then north along the range line common to R. 2 E and R. 3 E~~; then west along the township line common to T. 4 S and T. 3 S to the intersection with the southwest boundary of partial Section 31, T. 3 S, R. 1 W; then northwest along that line to the intersection with the range line common to R. 2 W and R. 1 W; then north~~ to the Riverside-San Bernardino County line.

(c) That portion of San Bernardino County west and south of a line described as follows:

Beginning at the San Bernardino-Riverside County boundary and running north along the range line common to R. 3 E and R. 2 E; then west along the township line common to T. 3 N and T. 2 N to the San Bernardino-Los Angeles County boundary; also included is that portion of Los Angeles County which lies south and west of a line described as follows: beginning at the Los Angeles-San Bernardino County boundary and running west along the township line common to T. 3 N and T. 2 N; then north along the range line common to R. 8 W and R. 9 W; then west along the township line common to T. 4 N and T. 3 N; then north along the range line common to R. 12 W and R. 13 W to the southeast corner

of Section 12, T. 5 N; R. 13 W; then west along the south boundaries of Sections 12, 11, 10, 9, 8, 7, T. 5 N, R. 13 W to the boundary of the Angeles National Forest which is collinear with the range line common to R. 13 W and R. 14 W; then north and west along the Angeles National Forest boundary to the point of intersection with the township line common to T. 7 N and T. 6 N (point is at the northwest corner of Section 4 in T. 6 N, R. 14 W); then west along the township line common to T. 7 N and T. 6 N; then north along the range line common to R. 15 W and R. 16 W to the southeast corner of Section 13, T. 7 N, R. 16 W; then along the south boundaries of Sections 13, 14, 15, 16, 17, 18, T. 7 N, R. 16 W; then north along the range line common to R. 16 W and R. 17 W to the north boundary of the Angeles National Forest (collinear with township line common to T. 8 N and T. 7 N); then west and north along the Angeles National Forest boundary to the point of intersection with the south boundary of the Rancho La Liebre Land Grant; then west and north along this land grant boundary to the Los Angeles-Kern County boundary.

(d) That portion of Los Angeles County which lies south and west of a line described as follows:

Beginning at the Los Angeles-San Bernardino County boundary and running west along the township line common to T. 3 N and T. 2 N, San Bernardino Base and Meridian; then north along the range line common to R. 8 W and R. 9 W; then west along the township line common to T. 4 N and T. 3 N; then north along the range line common to R. 12 W and R. 13 W to the southeast corner of Section 12, T. 5 N, R. 13 W; then west along the south boundaries of Sections 12, 11, 10, 9, 8, 7, T. 5 N, R. 13 W to the boundary of the Angeles National Forest which is collinear with the range line common to R. 13 W and R. 14 W; then north and west along the Angeles National Forest boundary to the point of intersection with the township line common to T. 7 N and T. 6 N (point is at the northwest corner of Section 4 in T. 6 N, R. 14 W); then west along the township line common to T. 7 N and T. 6 N; then north along the range line common to R. 15 W and R. 16 W to the southeast corner of Section 13, T. 7 N, R. 16 W; then along the south boundaries of Sections 13, 14, 15, 16, 17, 18, T.7 N, R. 16 W; then north along the range line common to R. 16 W and R. 17 W to the north boundary of the Angeles National Forest (collinear with township line common to T. 8 and T. 7 N) then west and north along the Angeles National Forest boundary to the point of intersection with the south boundary of the Rancho La Liebre Land Grant; then west and north along this land grant boundary to the Los Angeles-Kern County boundary.

NOTE: Authority cited: Sections 39601 *and 39606.1*, Health and Safety Code. Reference: Sections 39001, 39606(a), *39606.1*, and 40410, Health and Safety Code.

**Section 60109.**
**~~Southeast~~ *Mojave* Desert *Air* Basin.**

~~(a) All of Imperial County~~

(~~b~~a) That portion of Riverside County which lies east of a line described as follows:

*That segment of the southwestern boundary line of Hydrologic Unit Number 18100100 within Riverside County[1], further described as follows:*
Beginning at the Riverside-~~San Diego~~ *Imperial* County boundary and

running north along the range line common to ~~R. 4 E. and R. 3 E., San Bernardino Base and Meridian; then east along the township line common to T. 8 S. and T. 7 S.; then north along the range line common to R. 5 E. and R. 4 E.; then west along the township line common to T. 6 S. and T. 7 S. to the southwest corner of Section 34, T. 6 S., R. 4 E.; then north along the west boundaries of Sections 34, 27, 22, 15, 10, 3, T. 6 S., R. 4 E.; then west along the township line common to T. 5 S. and T. 6 S.; then north along the range line common to R. 4 E. and R. 3 E.; then west along the south boundaries of Sections 13, 14, 15, 16, 17 and 18, T. 5 S., R. 3 E.; then north along the range line common to R. 2 E. and R. 3 E.; then west along the township line common to T. 4 S. and T. 3 S. to the intersection with the southwest boundary of partial Section 31, T. 3 S., R. 1 W.; then northwest along that line to the intersection with the range line common to R. 2 W. and R. 1 W.; then north~~ *R. 17 E. and R. 16 E., San Bernardino Base and Meridian; then northwest along the ridge line of the Chuckwalla Mountains, through T. 8 S., R. 16 E. and T. 7 S., R. 16 E., until the Black Butte Mountain, elev. 4504'; then west and northwest along the ridge line to the southwest corner of T. 5 S., R. 14 E.; then north along the range line common to R. 14 E. and R. 13 E.; then west and northwest along the ridge line to Monument Mountain, elev. 4834'; then southwest and then northwest along the ridge line of the Little San Bernardino Mountains to Quail Mountain, elev. 5814'; then northwest along the ridge line* to the Riverside-San Bernardino County line.

(~~c~~*b*) That portion of San Bernardino County east and north of a line described as follows:

Beginning at the San Bernardino-Riverside County boundary and running north along the range line common to R. 3 E. and R. 2 E., San Bernardino Base and Meridian; then west along the township line common to T. 3 N. and T. 2 N. to the San Bernardino-Los Angeles County boundary.

(~~d~~*c*) That portion of Los Angeles County which lies north and east of a line described as follows:

Beginning at the Los Angeles-San Bernardino County boundary and running west along the township line common to T. 3 N. and T. 2 N., San Bernardino Base and Meridian; then north along the range line common to R. 8 W. and R. 9 W.; then west along the township line common to T. 4 N. and T. 3 N.; then north along the range line common to R. 12 W. and R. 13 W. to the southeast corner of Section 12, T. 5 N., R. 13 W.; then west along the south boundaries of Sections 12, 11, 10, 9, 8, 7, T. 5 N., R. 13 W. to the boundary of the Angeles National Forest which is collinear with the range line common to R. 13 W. and R. 14 W.; then north and west along the Angeles National Forest boundary to the point of intersection with the township line common to T. 7 N. and T. 6 N. (point is at the northwest corner of Section 4 in T. 6 N., R. 14 W.); then west along the township line common to T. 7 N. and T. 6 N.; then north along the range line common to R. 15 W. and R. 16 W. to the southeast corner of Section 13, T. 7 N., R. 16 W.; then along the south boundaries of Sections 13, 14, 15, 16, 17, 18, T. 7 N., R. 16 W.; then north long the range line common to R. 16 W. and R. 17 W. to the north boundary of the Angeles National Forest (collinear with township line common to T. 8 N. and T. 7 N.) then west and north along the Angeles National Forest boundary to the point of intersection with the south boundary of the Rancho La Liebre Land Grant; then west and north along this land grant boundary to the Los Angeles-Kern County boundary.

(ed) That portion of Kern County east and south of a line described as follows:

Beginning at the Kern-Los Angeles County boundary and running north and east along the northwest boundary of the Rancho La Liebre Land Grant to the point of intersection with the range line common to R. 16 W. and R. 17 W., San Bernardino Base and Meridian; north along the range line to the northwest corner of S. 19, T. 11 N., R. 16 W.; then northwest along the northeast boundary of the Rancho El Tejon Land Grant to the southeast corner of S. 33, T. 12 N., R. 17 W., San Bernardino Base and Meridian; then west and north to include all of S. 33, T. 12 N., R. 17 W.; then northwest along the Rancho El Tejon line to the southwest corner of S. 35, T. 32 S., R. 30 E.; then north to the northwest corner of S. 35, T. 31 S., R. 30 E.; then northeast along the boundary of the Rancho El Tejon Land Grant to the northwest corner of S. 19, T. 31 S., R. 31 E.; then east to the southwest corner of S. 18, T. 31 S., R. 32 E.; then north along the range line common to R. 31 E. and R. 32 E. to the northwest corner of S. 6, T. 29 S., R. 32 E; then east to the southwest corner of S. 31, T. 28 S, R. 32 E; then north along the range line common to R. 31 E., and R. 32 E. to the Kern-Tulare County boundary.

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*[1] Hydrologic Unit Map, 1978, State of California (Southern Half), Department of the Interior, Geological Survey, Reston, Virginia (Reprinted 1987), incorporated by reference herein.*

NOTE: Authority cited: Sections 39601 *and 39606.1*, Health and Safety Code. Reference: Sections 39001, ~~and~~ 39606(a), *and 39606.1*, Health and Safety Code.

**Section *60114.***
***Salton Sea Air Basin.***

*(a) All of Imperial County*

*(b) That portion of Riverside County which lies east of a line described as follows:*

*Beginning at the Riverside-San Diego County boundary and running north along the range line common to R. 4 E and R. 3 E; then east along the township line common to T. 8 S and T. 7 S; then north along the range line common to R. 5 E and R. 4 E; then west along the township line common to T. 6 S and T. 7 S to the southwest corner of Section 34, T. 6 S, R. 4 E; then north along the west boundaries of Sections 34, 27, 22, 15, 10, 3, T. 6 S, R. 4 E; then west along the township line common to T. 5 S and T. 6 S; then north along the range line common to R. 4 E and R. 3 E; then west along the south boundaries of Sections 13, 14, 15, 16, 17 and 18, T. 5 S, R. 3 E; then north along the range line common to R. 2 E and R. 3 E to the Riverside-San Bernardino County line;*

*and west of a line described as follows:*

*That segment of the southwestern boundary line of Hydrologic Unit Number 18100100 within Riverside County[1], further described as follows: Beginning at the Riverside-Imperial County boundary and running north along the range line common to R. 17 E. and R. 16 E., San Bernardino Base and Meridian; then northwest along the ridge line of the*

*Chuckwalla Mountains, through T. 8 S., R. 16 E. and T. 7 S., R. 16 E., until the Black Butte Mountain, elev. 4504'; then west and northwest along the ridge line to the southwest corner of T. 5 S., R. 14 E.; then north along the range line common to R. 14 E. and R. 13 E.; then west and northwest along the ridge line to Monument Mountain, elev. 4834'; then southwest and then northwest along the ridge line of the Little San Bernardino Mountains to Quail Mountain, elev. 5814'; then northwest along the ridge line to the Riverside-San Bernardino County line.*

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[1] *Hydrologic Unit Map, 1978, State of California (Southern Half), Department of the Interior, Geological Survey, Reston, Virginia (Reprinted 1987), incorporated by reference herein.*

*NOTE: Authority cited: Sections 39601 and 39606.1, Health and Safety Code. Reference: Sections 39001, 39606(a), 39606.1, Health and Safety Code.*

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# APPENDIX E

## TEXT OF

## PROPOSED AMENDMENTS TO THE

## AGRICULTURAL BURNING REGULATIONS

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**APPENDIX E**

**TEXT OF**
**PROPOSED AMENDMENTS TO THE**
**AGRICULTURAL BURNING REGULATIONS**

CALIFORNIA CODE OF REGULATIONS (CCR), TITLE 17,
SECTION 80280 AND NEW SECTION 80311

(Additions are shown as *italicized/underlined* and deletions are shown as ~~strikeout~~)

**Section 80280.**
**~~Southeast Desert~~ *Salton Sea* Air Basin.**

And that portion of the San Diego Air Basin which lies east of a line beginning at the U.S.-Mexico border and running north along the range line common to R.7E and R.6E. San Bernardino Base and Meridian: to the southeast corner of T.16S. R.6E; then west along the township line common to T.16S and T.17S to the southwest corner of T.16 S. R.6E; then north along the range line common to R.6E and R.5E to the southeast corner of T.14S. R.5E; then west along the township line common to T.14S and T.15 S to the point of intersection with the east boundary of Cuyamaca Park; then north along the east boundary of Cuyamaca Park to the point of intersection with the range line common to R.5E and R.4E; then north along this range line to the point of intersection with the south boundary of the San Felipe Land Grant; then east and north along the land grant boundary to the easternmost corner: then continuing west and north along the land grant boundary to the point of intersection with the range line common to R.5E and R4E; then north along this range line to the point of intersection with the township line common to T.10S and T.9S; then west along this township line to the point of intersection with the range line common to R.4E and R.3E: then north along this range line to the San Diego-Riverside County boundary.

(a) A permissive-burn day will be declared when at least three of the following criteria are met:

(1) Near the time of day when the surface temperature is at a minimum, the temperature at 3,000 feet above the surface is not warmer than the surface temperature by more than 13 degrees Fahrenheit.

(2) The expected temperature at 3,000 feet above the surface is colder than the expected surface temperature by at least 11 degrees Fahrenheit for 4 hours.

(3) The expected daytime wind speed at 3,000 feet above the surface is at least 5 miles per hour.

(4) The expected daytime wind direction in the mixing layer is not southeasterly.

(b) There are special situations, as specified in subdivision (c) of Section 80110, when burning control notices for certain specific burning operations may be issued up to 48 hours in advance. In such a

case, the criteria used will be a modification of the above criteria so as to give consideration to the specific site and its location relative to populous areas, the stated amount of material to be burned, and the expected impact that the burn will have on air quality.

NOTE: Authority cited: Sections 39600, 39601, 41856 and 41859, Health and Safety Code. Reference: Sections 41854, 41855, 41856, 41857, 41859 and 41863, Health and Safety Code.

**Section *80311.***
***Mojave Desert Air Basin.***

*(a) A permissive-burn day will be declared when the following criteria are met:*

*(1) Near the time of day when the surface temperature is at a minimum, the temperature at 3,000 feet above the surface is not warmer than the surface temperature by more than 13 degrees Fahrenheit.*

*(2) The expected temperature at 3,000 feet above the surface is colder than the expected surface temperature by at least 11 degrees Fahrenheit for 4 hours.*

*(3) The expected daytime wind speed at 3,000 feet above the surface is at least 5 miles per hour.*

*(b) There are special situations, as specified in subdivision (c) of Section 80110, when burning control notices for certain specific burning operations may be issued up to 48 hours in advance. In such a case, the criteria used will be a modification of the above criteria so as to give consideration to the specific site and its location relative to populous areas, the stated amount of material to be burned, and the expected impact that the burn will have on air quality.*

*NOTE: Authority cited: Sections 39600, 39601, 41856 and 41859, Health and Safety Code. Reference: Sections 41854, 41855, 41856, 41857, 41859 and 41863, Health and Safety Code.*

# APPENDIX F

## WRITTEN COMMENTS RECEIVED

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**Douglas Y. Mac Iver**
Doug Mac Iver Consulting
38591 Talbot Drive, P. O. Box 120001
Big Bear Lake, California 92315
(909) 866-2558

March 8, 1996

AIR RESOURCES BOARD
2020 L Street
P.O. Box 2815
Sacramento, CA 95812

Attention: Rich Bradley

COMMENTS ON PROPOSED CHANGES TO THE BOUNDARIES OF THE SOUTHEAST DESERT AND SOUTH COAST AIR BASINS

These comments are in addition to and amplify my oral statements at the Public Consultation Meeting in Victorville on February 23,1996.

I am asking the Air Resources Board to move the present boundaries of the Southeast Desert Air Basin (SEDAB) to the south to include the Big Bear Lake Valley when they determine the boundaries of the South Coast Air Basin (SCAB) and the new Mojave Desert Air Basin (MODAB). Comments on the Names of the new Air Basins are included.

NAMES

I believe that the best name for the southern part of the SEDAB is the Colorado Desert Air Basin with CODAB as the acronym. Along similar lines I propose MODAB as the acronym for the new Mojave Desert Air Basin. These acronyms will be used in these comments.

RIVERSIDE COUNTY BOUNDARIES

I support the ARB staff proposal to place the new boundary between the MODAB and the CODAB along the hydrologic boundary along the crest of the Chuckwalla and Little Mountains to the Riverside-San Bernardino County line. Then the boundary should continue west along the county line to the present SEDAB-SCAB boundary along the north-south line common between R2E and R3E.

I support moving the Banning area into the SCAB as proposed.

SAN BERNARDINO COUNTY BOUNDARIES

The ARB should redraw the artificial boundaries between the SCAB and the SEDAB in the San Bernardino Mountains at least to somewhat follow natural topographic, meteorologic or hydrological

lines instead of the present lines of convenience between R2E, R3E and the east-west line which extends 50 miles or more between T2N, and T3N to the Los Angeles County line. That ample precedence for this is very evident in the square or rectangular boundary lines between the SEDAB and SCAB to the west and throughout the state.

These artificial lines of convenience are improper and create unfair and unwarranted restrictions on some areas such the Big Bear Lake area. This is discussed below and several boundary changes are proposed for the Big Bear area.

BIG BEAR LAKE VALLEY

Big Bear Lake Valley and SCAB have very little in common. Big Bear Lake is at an elevation of about 6745 feet (2056 M.) It is sparsely populated, does not have any heavy industry and is basically a mountain recreation area. It does not have the severe inversion layer that is found during parts of the year in the relatively low lying in SCAB which ranges from sea level to the west to about 1500 feet in elevation east of San Bernardino not including the surrounding mountains which enclose the SCAB.

There are many features of Big Bear that are much more similar to the "high desert" of the MODAB than the SCAB:

1. Elevation.
2. Generally sparse population.
3. Lack of severe inversion layers.
4. Both are downwind from the SCAB. However, Big Bear at the much higher elevation is not so highly impacted by the intrusion or transport of pollutants from the SCAB as is the MODAB through the Cajon Pass and in Soledad Canyon in Los Angeles County.

By some quirk of fate, the County Dump which serves Big Bear and is located about one mile north of Baldwin Lake is in the SEDAB and in the Mojave Desert AQMD. Big Bear Lake itself is about 2 to 2 1/2 miles south of the boundary line along the township line common to T 3 N and T 2 N, San Bernardino Base & Meridian which separates the SCAB and SCAQMD from the SEDAB and the MDAQMD.

PROPOSED OPTIONS FOR NEW BOUNDARY LINES BETWEEN SCAB AND SEDAB IN THE BIG BEAR AREA OF SAN BERNARDINO COUNTY

These options are shown on the attached map.

A. Move the present boundary 6 miles south to the east-west line along the township line common to T 1 N and T 2 N, and continue west to the north-south line along the range line between R 1 W and R 2 W and thence north to the present SEDAB-SCAB boundary along the line between T 3 N and T 2 N.

B. Move the present boundary 12 miles south to the east-west line along the township line common to T 1 N and T 1 S, and continue west to the north-south line along the range line between R 1 W and R 2 W and thence north to the present SEDAB-SCAB boundary along the line between T 3 N and T2N.

C. From the ARB proposed line in Riverside County along the Chuckwalla and Little Mountains continue west along the Riverside-San Bernardino County line to the present SEDAB-SCAB boundary along the line common to R2E and R3E. Thence north to Onyx Summit (about the common section corner for secs. 1, 12 T1N R2E, & secs. 6, 7 T1N, R3E) on Highway 38. Thence, continue almost due west to Sugarloaf Mountain, thence westerly to Keller Peak thence northwesterly to Deer Mountain to the present SEDAB boundary along the township line common to T 3 N and T 2 N.

D. From the ARB proposed line in Riverside County along the Chuckwalla and Little Mountains continue west along the Riverside-San Bernardino County line to the present SEDAB-SCAB boundary along the line common to R2E and R3E. Thence northwesterly to Mount San Gorgonio, thence to Keller Peak, then northwesterly to Deer Mountain to the present SEDAB boundary along the township line common to T 3 N and T 2 N.

RECOMMENDED SOLUTION FOR THE BIG BEAR AREA OF SAN BERNARDINO COUNTY

I recommend either option B or D as outlined above.

Option B would be the easiest to define legally.

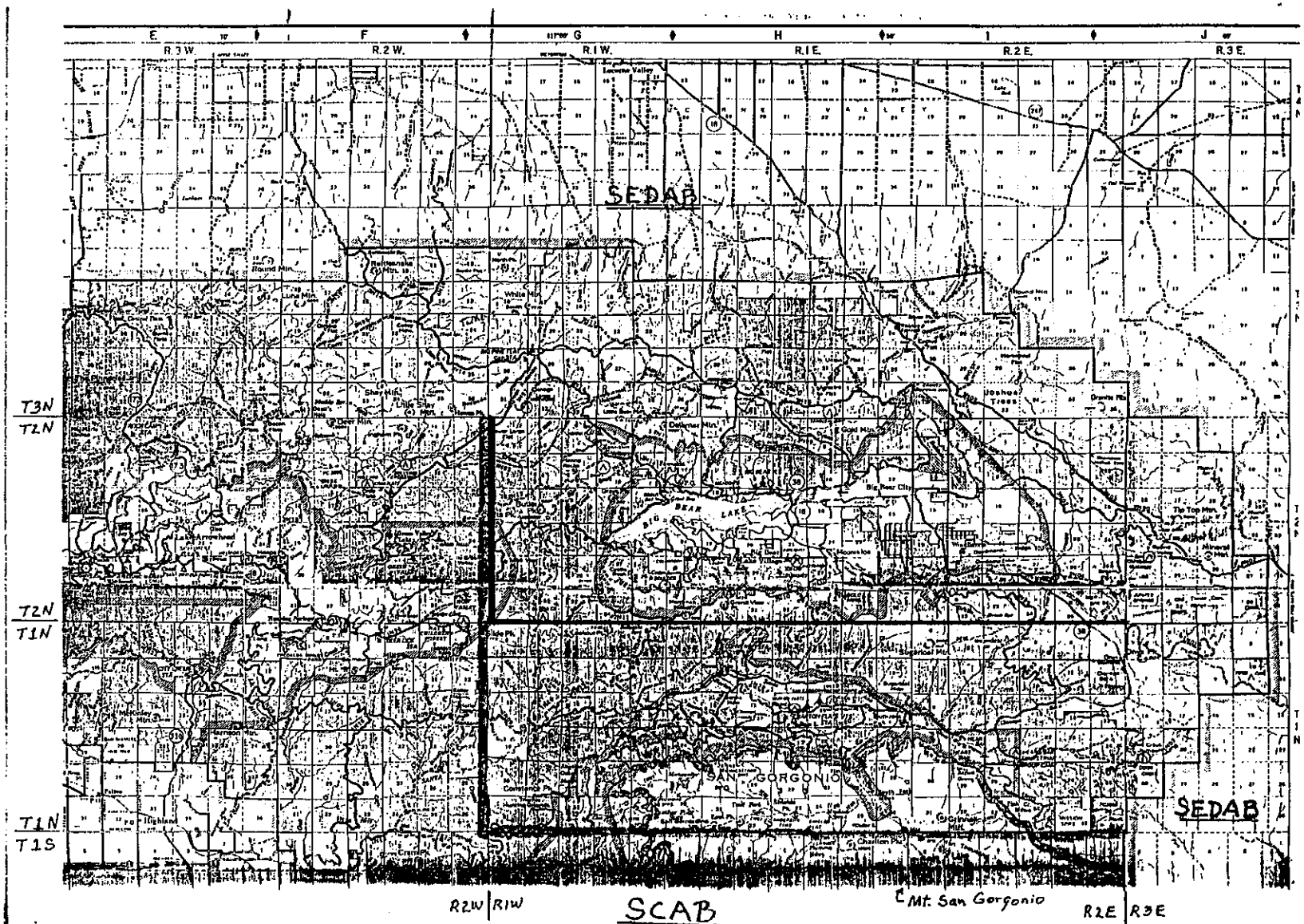
Option D is probably more correct from a topographic, meteorologic and hydrologic viewpoint.

Respectfully submitted.

Douglas Y. Mac Iver

Douglas Y. Mac Iver
Registered Geologist #1780

CC: Barbara Riordan, San Bernardino Co. Board of Supervisors
Chuck Fryxell, MDAQMD




Legend

Option A

Option B

Option C

Option D

Present Boundary SEDAD-SCAB

Map Showing Options For Suggested Changes To The Southeast Desert And South Coast Air Basins Boundaries

D. Y. Mac Iver 3/8/96

| | | | |
|---|---|---|---|
| S.B. Co. / Riv. Co. | T1S / T2S | S.B. Co. / Riv. Co. |

# CUSHENBURY MINE TRUST

Orlo J. Anderson
Mining Manager
P.O. Box 7032
26730 Catalina Way
Desert Center, CA 92239

Telephone (619) 227-3261
Fax (619) 227-3261

March 15, 1996

Mr. Terry McGuire, Chief
Technical Support Division
State of California
Air Resource Board
P.O. Box 2815
Sacramento, CA 95812

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 2

| | |
|---|---|
| To Terry McGuire | From Orlo Anderson |
| Co. ARB | Co. Cushenbury |
| Dept. Tech. Support Div. | Phone # |
| Fax # (916) 327-8524 | Fax # Original to follow |

Subject: Proposed Boundary Changes for the Southeast Desert and South Coast Air Basins

Dear Mr. McGuire:

The Cushenbury Mine Trust owns or hold by rights-of-location extensive mineral lands along the northern slope of the San Bernardino Mountain bisected by the northern boundary of the San Bernardino National Forest to the south and the southeast of the community of Lucerne Valley.

The Trust was created by agreement between the former Kaiser Steel Corporation and the United Steelworkers of America with the closure by Kaiser of its Fontana, California, steelmaking operations. Mineral lands owned by Kaiser were deeded to the Trust as its sole asset, and monies derived from the leasing by the Trust of mining rights on those lands to various developers are used in their entirety to provide medical benefits to several thousand Kaiser retirees. Two major firms produce color-controlled limestone products from the property at the present time, and cement-grade limestone is sold from the property as well.

A substantial portion of the Trust property lies inappropriately, we feel given the meteorological and hydrogeological conditions of the area, partially within the Southeast Desert Air Basin and partially within the South Coast Air Basin, that common boundary between those basins currently coinciding with the northern boundary of the national forest near the toe of the northern slope of the mountains.

The issue of this boundary designation was raised during the ARB public meeting on February 23, 1996, in Victorville, and it was suggested that the boundary common to those basins would be more logically sited southward to allow the entire northern slope to

appropriately lie within the Southeast Desert Air Basin. We concur with that suggestion and request an appropriate revision of that boundary suggesting that a readily recognizable revised boundary would lie along Highway 18 from the community of Big Bear westward in the area. Such a revised boundary would be more in conformance with the criteria for air basin boundary designation described by ARB staff at the February 23rd meeting, while the current boundary completely ignores those criteria.

Further west as that boundary affects the San Gabriel Mountains, we feel that the Wrightwood air monitoring station should remain in the South Coast Air Basin as it records that basin's poor air quality.

We feel that the general area of the portion of our property lying within the current South Coast boundary is being unjustly penalized by its inappropriate placement in that basin the air quality of which reflects that of the greater Los Angeles metropolitan area, and we feel that these suggested changes would appropriately place our property in a re-designated Mojave Desert Air Basin, which would fairly subject it to the prevailing conditions and regulations of that revised desert basin.

Sincerely yours,

Orlo J. Anderson
Mining Manager

cc: J.D. Ratelle

March 19, 1996

Mr. Rich Bradley
Air Resources Board
2020 L Street
P. O. Box 2815
Sacramento, CA 95812

Dear Mr. Bradley:

Re: Inclusion of Big Bear Valley in the Mojave Desert Air Basin

The Board of Directors of the Big Bear Chamber of Commerce, which represents 520 businesses, hereby requests the Air Resources Board to consider changing the proposed boundaries of the Mojave Desert Air Basin (MODAB) to include the entire Big Bear Valley. According to the proposed plan presented in the Public Consultation Meeting in Victorville on February 23, 1996, our Big Bear Valley would remain in the South Coast Air Basin when the Southeast Desert Air Basin (SEDAB) is split into two separate districts.

The proposed line separating the MODAB from the proposed Colorado Desert Air Basin (CODAB) runs adjacent to the San Bernardino County Landfill, located in the eastern part of our Big Bear Valley. Big Bear Lake itself is approximately 2 ½ miles south of the boundary line along township line common to T3N and T2N, San Bernardino Base & Meridian, which separates the SCAB and SCAQMD from the SEDAB and the MDAQMD.

Our Big Bear Valley and the South Coast Air Quality Management District have very little in common, as our Valley is sparsely populated, we do not have any heavy industry, and we are basically a mountain recreation area. In addition, our Valley is at an elevation of approximately 6,745 feet and we do not have the sever inversion layer that is found during parts of the year in the relatively low lying SCAB, which ranges from sea level to approximately 1,500 feet in elevation east of San Bernardino, not including the surrounding mountains which enclose the SCAB.

BIG BEAR CHAMBER OF COMMERCE
P.O. BOX 2860 • BIG BEAR LAKE, CALIFORNIA 92315-2860
PHONE (909) 866-4607 • FAX (909) 866-5412

Our Big Bear Valley has much more in common with the "High Desert" of the MODAB than the SCAB, which include the following:

1. Elevation.
2. Generally sparse population.
3. Lack of severe inversion layers.
4. Both are downwind from the SCAB. However, Big Bear Valley, at a much higher elevation, is not so highly impacted by the intrusion or transport of pollutants from the SCAB, as in the MODAB through the Cajon Pass.

It is our understanding that Mr. Douglas Mac Iver, a Geologist and Environmental Engineer, as well as a full time resident of Big Bear Lake, as made several recommendations for new boundary lines between SCAB and SEDAB as it relates to our Big Bear Valley. We would agree and support either of the following recommendations:

1. Move the present boundary 12 miles south to the east-west line along the township line common to T1N and T1S, and continue west to the north-south line along the range line between R1W and R2W, and thence north to the present SEDAB-SCAB boundary along the line between T3N and T2N.

2. From the ARB proposed line in Riverside County along the Chuckwalla and Little Mountains, continue west along the Riverside-San Bernardino County line to the present SEDAB-SCAB boundary, along the line common to R2E and R3E. Thence northwesterly to Mount San Gorgonio, thence to Keller Peak, then northwesterly to Deer Mountain to the present SEDAB boundary along the township line common to T3N and T2N.

We ask the Air Resources Board to give serious consideration to our request for this proposed boundary change.

Sincerely,

Rosie Hinojos
President

C Barbara Riordan, San Bernardino County Board of Supervisors

BIG BEAR CHAMBER OF COMMERCE
P.O. BOX 2860 • BIG BEAR LAKE, CALIFORNIA 92315-2860
PHONE (909) 866-4607 • FAX (909) 866-5412

# RESOLUTION NO. 1996-24

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BANNING REGISTERING ITS OPPOSITION TO THE PROPOSED AIR BASIN REDESIGNATION BY THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT TO REALIGN THE CITY OF BANNING FROM THE SOUTHEAST DESERT AIR BASIN TO THE SOUTH COAST AIR BASIN**

WHEREAS, the South Coast Air Quality Management District (SCAQMD) has placed the City of Banning on notice that it has requested the California Air Resources Board (CARB) realign the air basin boundaries such that the Banning Pass Area be within the boundaries of the South Coast Air Basin (SOCAB); and

WHEREAS, at a meeting held on January 30, 1996 in the Banning City Council Chambers the South Coast Air Quality Management District stated it had determined the Banning Pass Area was more closely aligned with the SOCAB than with the Southeast Desert Air Basin (SEDAB); and

WHEREAS, the Banning City Council disagrees with SCAQMD's determination.

NOW, THEREFORE, BE IT RESOLVED that the City of Banning hereby registers its opposition to realigning the Banning Pass Area from the Southeast Desert Air Basin to the South Coast Air Basin on the following basis:

(1) Individuals representing the SCAQMD who were present at the January 30, 1996 meeting were unable to provide quantitative data to questions posed by City Councilmembers related to the impacts the proposed realignment would have on potential manufacturers seeking to locate to the City. Responses by SCAQMD representatives frequently included statements such as "minimal impacts", "negligible" etc. and were determined to be allusive and unacceptable to the Councilmembers posing the questions.

(2) SCAQMD failed to recognize that topographic and meteorological conditions present in the Banning Pass Area are unique and are not substantially similar to the topographic and meteorological conditions present in the SOCAB or SEDAB. On this basis, the City Council believes that perhaps Banning should be severed from both air basins and that a new air basin be formed.

(3) SCAQMD's use of precipitation measurements as the basis for realignment is both inaccurate and inconclusive. The amount of precipitation received by communities within the Pass area varies dramatically. Banning receives substantially less rainfall than other communities to the west (Beaumont for instance). Based upon this demarcation, it is inaccurate and unfair to align Banning with communities which receive greater amounts of precipitation, then,

conclude Banning's micro-climate is substantially similar to communities located within the SOCAB.

Additionally, it fails to take into consideration prevailing wind patterns and certain seasonal temperatures. Wind patterns for instance would be more aligned with SEDAB than SOCAB (refer to subnumeral #4). During summer months Pass Area temperatures are more aligned with temperatures in the SEDAB than the SOCAB.

(4) The Banning City Council does not see the logic in realigning air basins. Banning does not generate the noxious air emissions for which the Cities within the SEDAB have issue. The noxious air emissions result from stationary and mobile sources generated within the SOCAB. Lumping the Banning Pass Area with cities located in the SOCAB which generate the noxious air emissions will stigmatize the City of Banning, will impede economic development and the City's ability to lure manufacturers and other job creating businesses to the City.

Section 1. Severability

If any section, subsection, sentence clause, phrase or portion of this Resolution is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Resolution. The City Council of the City of Banning hereby declares that it would have adopted this Resolution and each section, subsection, sentence, clause, phrase or portions thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, phrases or portions be declared invalid or unconstitutional.

**RESOLUTION NO. 1996-24**

PASSED, APPROVED, AND ADOPTED this 13th day of Feb. 1996.

Donald E. Smith, Mayor
City of Banning, California

APPROVED AS TO FORM AND
LEGAL CONTENT



CERTIFIED TO BE A TRUE AND CORRECT COPY OF THE ORIGINAL DOCUMENT ON

John F. Wilson
City Attorney

COPY OF THE ORIGINAL DOCUMENT ON
FILE IN THE OFFICE OF THE CITY CLERK
BY Josie L. Calderon
TITLE City Clerk
DATE 2-16-95

ATTEST:

Marie Calderon
City Clerk of the City of Banning

CERTIFICATION:

I, Marie Calderon, City Clerk of the City of Banning, California, do hereby certify that the foregoing Resolution No. 1996-24, was duly adopted by the City Council of the City of Banning, California, at a regular meeting thereof held on the 13th day of Feb., 19 96, by the following vote, to wit:

AYES: Councilmembers Hunt, Lewis, Lucsko, Mayor Smith

NOES: None

ABSENT: Councilmembers Williams

ABSTAIN: None

Marie Calderon, City Clerk
City of Banning, California