

**VENTURA COUNTY AIR
POLLUTION CONTROL DISTRICT**

**2007
AMBIENT AIR
MONITORING NETWORK PLAN**

August 2007

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Ventura, CA 93003

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Definition of Terms

AQS:	Air Quality System
BAM	Beta Attenuation Monitor
CFR	.....	Code of Federal Regulations
CMSA	.....	Consolidated Metropolitan Statistical Area
CO	.....	Carbon Monoxide
District:	.....	Ventura County Air Pollution Control District
EPA	.....	U. S. Environmental Protection Agency
FRM	.....	Federal Reference Method
NAAQS:	.....	National Ambient Air Quality Standards
NO ₂	.....	Nitrogen Dioxide
O ₃	.....	Ozone
PM	.....	Particulate Matter
PM _{2.5}	.....	Particulates less than or equal to 2.5 microns in size
PM ₁₀	.....	Particulates less than or equal to 10 microns in size
SIP	.....	State Implementation Plan
SLAMS:	.....	State and Local Air Monitoring Stations
SO ₂	.....	Sulfur Dioxide
VCAPCD:	.....	Ventura County Air Pollution Control District

1.0 Introduction

The Ventura County Air Pollution Control District's 2007 Ambient Air Monitoring Network Plan is an examination and evaluation of the District's network of air pollution monitoring stations. This annual review of the District's air monitoring network is required by Title 40, Code of Federal Regulations, Part 58.10 (40 CFR 58.10). This report describes the network of ambient air quality monitors operated by the Ventura County Air Pollution Control District. It includes a review of actions taken during 2006 and plans for action in the year ahead.

Recent changes to the Code of Federal Regulations require specific detailed monitoring network information be included in this report along with a 30-day public review period prior to submittal of the report to the U.S. Environmental Protection Agency (USEPA). The regulations require that the report be submitted to USEPA by July 1 of each year.

2.0 Overview of Network Operation

The Ventura County Air Quality Control District operates six air monitoring sites within Ventura County. The District's monitoring network has been designed to provide ozone, PM_{2.5} and PM₁₀ monitoring coverage to the majority of the inhabited regions of the County. The District has conducted air monitoring for ozone or oxidants in Ventura County since 1963.

The District's air monitoring network has been designed to provide air monitoring to the following regions of Ventura County:

Conejo Valley – an inland area, which includes the city of Thousand Oaks and the communities of Westlake Village and Newbury Park, covering 75 square miles and home to 138,000 people. The area is surrounded by foothills and low-lying mountains. The eastern edge of the Conejo Valley is the border between Ventura and Los Angeles Counties. There are no major stationary sources in its boundaries.

Ojai Valley – an inland area including the City of Ojai and the communities of Oak View, and Meiners Oaks, which covers 102 square miles and is home to 30,000 people. The Ojai Valley is surrounded by mountain ranges. There are no major stationary sources within its boundaries, however, it may be influenced by oil production activities occurring to the south in the Ventura Coastal area. The area is impacted primarily by mobile sources.

Oxnard Coastal Plain – a broad coastal area from the Pacific Ocean to several inland valleys, covering 290 square miles and home to 207,000 people. The Oxnard Coastal Plain area is a relatively flat plain area with foothills and mountains at its northern border. This area holds the majority of the County's major sources, including two natural gas-fired electric generating units, two naval bases, a number of natural gas-fired cogeneration facilities, several oil and gas production and processing facilities, a paper manufacturing facility, a paper recycling facility and a magnetic tape manufacturing facility. The area is also home to considerable agricultural activities and a deepwater port. The area is impacted by marine shipping operations occurring off of the County's coast and mobile sources.

Santa Clara River Valley – an inland area, covering 204 square miles and home to 49,000 people. The Valley is surrounded by foothills and low-lying mountains. The eastern edge of the Santa Clara River Valley is the border between Ventura and Los Angeles Counties. The area is also home to considerable agricultural activities. There are oil production and processing activities occurring throughout the Valley. There are no major stationary sources in its boundaries. The area is impacted primarily by mobile sources.

Simi Valley – an inland area, which covers the cities of Simi Valley and Moorpark, is 142 square miles and is home to 148,000 people. The Valley is surrounded by foothills and low-lying mountains. The eastern edge of the Simi Valley is the border between Ventura and Los Angeles Counties. There is one major stationary source in its boundaries. The area is impacted primarily by mobile sources.

Ventura Coastal - a coastal area, which covers 114 square miles and is home to 180,000 people. The northern boundary of the Ventura Coastal area is foothills. The area is also home to some agricultural activities. The area is impacted by marine shipping operations occurring off of the County's coast and mobile sources. There are several major stationary sources in its boundaries.

Figure 1 shows the locations of the monitoring sites. Table 1 lists the pollutants currently measured at each site and the assigned Air Quality System (AQS) identification number for each monitoring site.

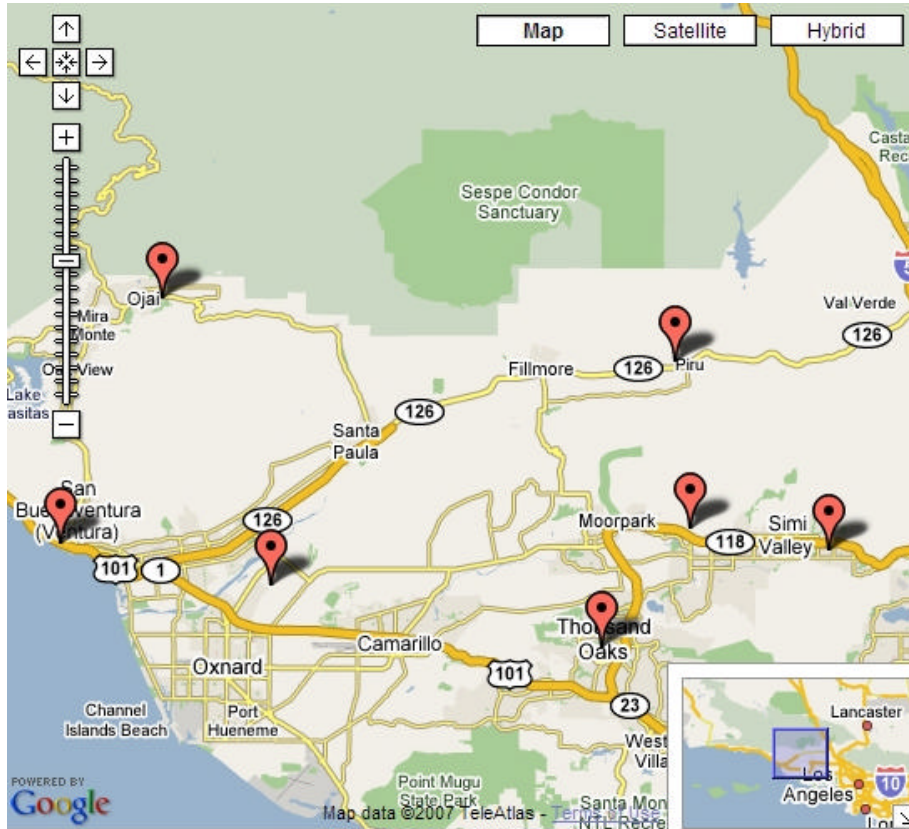


Figure 1
Map of Ventura County APCD Air Monitoring Stations

Table 1
Ventura County APCD Air Monitoring Stations

Site Name	AQS ID	Pollutants Monitored
El Rio – Rio Mesa School #2	061113001	NO ₂ , Ozone, Total NMHC, PM ₁₀ , BAM PM _{2.5} , FRM PM _{2.5}
Ojai – Ojai Avenue	061111004	Ozone, BAM PM _{2.5} , PM ₁₀
Piru – Pacific Avenue	061110009	Ozone, BAM PM _{2.5} , FRM PM _{2.5}
Simi Valley – Cochran Street	061112002	Ozone, NO ₂ , Total NMHC, PM ₁₀ , BAM PM _{2.5} , FRM PM _{2.5} Toxics, Cr ⁶⁺
Thousand Oaks – Moorpark Road	061110007	Ozone, BAM PM _{2.5} , FRM PM _{2.5}
Ventura – Emma Wood State Beach	061112003	Ozone

The Ventura County APCD's Air Monitoring Division includes the following staffing:

1. One supervising instrument technician and two instrument technicians whose primary functions are to operate the air monitoring network;
2. One supervising meteorologist and one meteorologist who are responsible for providing daily air quality forecasts, agricultural burn forecasts and providing assistance in maintaining and operating the District's five BAM PM_{2.5} monitors and the District's upper air profiler;
3. One supervising chemist and one chemist who are primarily responsible for operating, maintaining and conducting data analysis for the District's PAMS program;
4. One supervising specialist and one Specialist who are responsible for operating the District's PM_{2.5} filter weighing program and data input into EPA's Air Quality System (AQS).

The primary purposes of the Ventura County Air Pollution Control District's air monitoring network are: (1) to determine the County's attainment status for the federal and California standards for ozone, PM_{2.5} and PM₁₀; (2) to track the County's air quality trends; (3) to provide information to the public about the quality of the County's air quality (i.e., reporting of the Air Quality Index and ozone episode forecasting), and; (4) for data in air quality modeling efforts.

2.1 Monitoring Objectives and Spatial Scales

As listed by the USEPA, the monitoring objectives that the monitors in a monitoring network are to achieve include the following: (1) the highest pollutant concentrations; (2) the representative concentrations in areas of high population density; (3) the impact of major pollution emissions

sources; (4) the general background concentration levels; (5) the extent of pollutant transport, and (6) impacts on visibility, vegetation, and other welfare-based impacts.

The physical siting of an air monitoring station must achieve a spatial scale of representativeness that is consistent with the monitoring objective of the monitor. The spatial scale results from the physical location of the site with respect to the pollutant sources. It estimates the size of the area surrounding the monitoring site that experiences uniform pollutant concentrations. Table 2, below, shows the different monitoring objectives and the appropriate spatial scale. Table 3 shows each of the District’s air monitoring stations and its criteria pollutant objective and spatial scales.

The categories of spatial scale are:

- Microscale - An area of uniform pollutant concentrations ranging from several meters up to 100 meters.
- Middle Scale - Uniform pollutant concentrations in an area of about 100 meters to 0.5 kilometer.
- Neighborhood Scale - An area with dimensions in the 0.5 to 4.0 kilometer range.
- Urban Scale - Citywide pollutant conditions with dimensions ranging from 4 to 50 kilometers.
- Regional Scale – A large area, usually rural, of the same general geography and without large sources that extends from tens to hundreds of kilometers.

Table 2
Monitoring Objectives and Associated Spatial Scales

Monitoring Objective	Appropriate Spatial Scale
Highest concentration	Micro, Middle, Neighborhood
Population oriented	Neighborhood or Urban
Source Impact	Micro, middle, neighborhood
General/background levels	Urban, regional
Regional transport	Urban, regional
Welfare-related impacts	Urban, regional

Table 3
Criteria Pollutant Objective and Spatial Scales

<u>Monitoring Objective</u>	<u>Spatial Scale</u>
HC – High concentrations	MI - Microscale
PO – Population exposure	MS – Middle Scale
IM – Source impact	NS – Neighborhood Scale
BL – General/Background	US – Urban Scale
WF – Welfare-based	

Site Name	O3	NO2	PM _{2.5}	PM ₁₀
El Rio – Rio Mesa School #2	PO/US	PO/US	PO/NS	PO/NS
Ojai – Ojai Avenue	PO/US	--	PO/NS	PO/US
Piru – Pacific Avenue	HC/US	--	PO/NS	PO/NS
Simi Valley – Cochran Street	HC/US	HC/US	--	HC/NS
Thousand Oaks – Moorpark Road	PO/US	--	PO/NS	--
Ventura – Emma Wood State Beach	BL/NS	--		--

2.2 Minimum Monitoring Requirements

40 CFR 58.10, Appendix D specifies the minimum requirements for air monitoring networks. As shown in Tables 2, through 8, the Ventura County APCD air monitoring network meets the minimum monitoring requirements for all ozone, PM_{2.5} and PM₁₀. There are no minimum requirements for NO₂, CO or SO₂.

For ozone, the Countywide 8-hour design value is 0.095 ppm, a decline from 0.132 ppm in 1985 (Draft Ventura County 2007 Air Quality Management Plan Revision¹). The 1-hour design value in 2005 is 0.118 ppm, a decline from 0.19 ppm in 1985 (Draft Ventura County 2007 AQMP). In 2002 Ventura County attained the federal 1-hour ozone standard with a 1-hour ozone design of 0.124 ppm.

For PM_{2.5}, the Countywide 2006 annual design value is 10.3 µg/m³. The 2006 daily design value in is 28 µg/m³. The County has never exceeded either of these values.

For PM₁₀, the Countywide 2006 the maximum 24-hour average value in the years 2004 through 2006 is 119 µg/m³. The County has never exceeded either of these values.

¹ Draft Ventura County 2007 Air Quality Management Plan Revision

2.2.1 Ozone

The District operates ozone monitors at six air monitoring sites in the County. The County's historical ozone data for the federal 8-hour standard are shown below in Table 2 and Figure 3. As shown in Table 3, the Ventura County APCD air monitoring network exceeds the minimum monitoring requirement set forth in 40 CFR Part 58.

Table 4
 Historical Ozone Values
 8-Hour Average
 National Standard = 0.08 Parts per million

Air Monitoring Site	Days > 8-Hour Average Year			3 Year Average 4 th High Year		
	2004	2005	2006	2004	2005	2006
El Rio	0	0	0	0.066	0.066	0.062
Ojai	13	4	6	0.094	0.090	0.090
Piru	4	2	5	0.088	0.087	0.084
Simi Valley	11	10	13	0.092	0.091	0.090
Thousand Oaks	4	0	0	0.084	0.083	0.079
Ventura	0	0	0	0.069	0.068	0.064

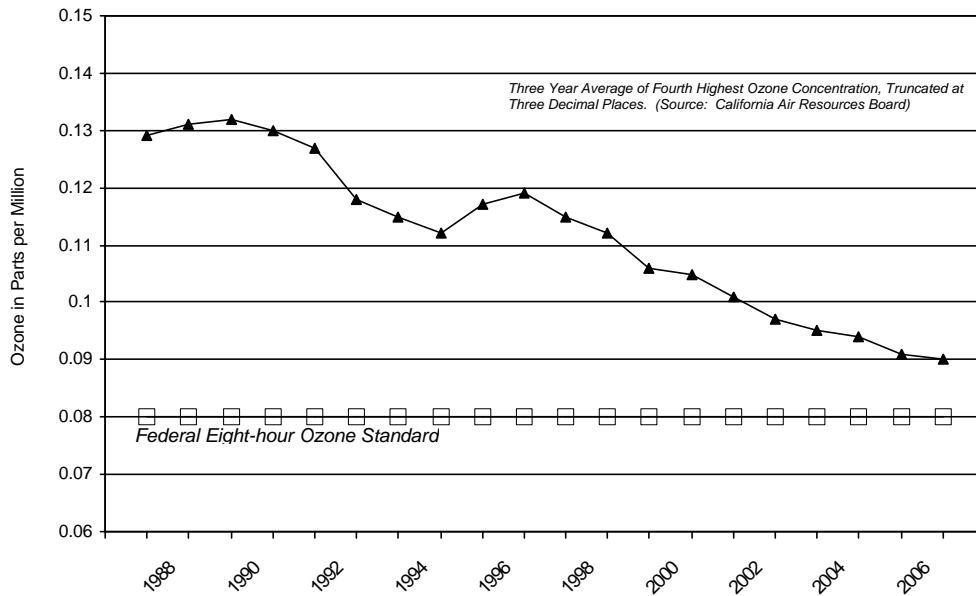


Figure 2
 Historical Eight-Hour Ozone Trends
 Three Year Average of Fourth Highest Concentration

Table 5
 Minimum Monitoring Requirements for Ozone

MSA	Population (2000)	8-hour Design Value (2006)	Min. # Monitors Required	# Monitors Active	# Monitors Needed
Oxnard-Thousand Oaks-Ventura MSA	752,445 ²	0.09	2 ³	6	0

² 2000 Census

³ 40 CFR Part 58, Appendix D, Section 4.1 and Table D-2

2.2.2 PM_{2.5}

The county's historical PM_{2.5} data for the federal 24-hour and annual arithmetic mean standards are shown below in Tables 4 and 5. Table 6 shows that the Ventura County APCD air monitoring network exceeds the minimum monitoring requires set forth in 40 CFR Part 58 for PM_{2.5}.

Table 6
 Historical PM_{2.5} Values
 24-Hour Standard
 National Standard = 35 µg/m³

Air Monitoring Site	Est. Days > 24-Hour Standard Year			98 th Percentile 24-Hour Value Year		
	2004	2005	2006	2004	2005	2006
El Rio	0	0	0	27	23.8	23.5
Piru	0	0	0	22.4	20.3	21.4
Simi Valley	0	0	0	36.7	26.3	27.6
Thousand Oaks	0	0	0	35.4	22.5	23.4

Table 7
 Historical PM_{2.5} Values
 Annual Arithmetic Mean
 National Standard = 15 µg/m³

Air Monitoring Site	Years > Annual Arithmetic Mean Year			Annual Arithmetic Mean Year		
	2004	2005	2006	2004	2005	2006
El Rio	0	0	0	11.3	10.5	9.8
Piru	0	0	0	10.1	9.2	9.3
Simi Valley	0	0	0	12.5	11.2	10.3
Thousand Oaks	0	0	0	11.3	10.5	9.7

Table 8
Minimum Monitoring Requirements for PM_{2.5}

MSA	Population (2000)	Ann. Design Value (2006)	Daily Design Value (2006)	# Monitors Required ⁴	# Monitors Active	# Monitors Needed
Oxnard-Thousand Oaks-Ventura MSA	752,445	10.3	28	1	4	0

2.2.3 PM₁₀

The County's historical PM₁₀ data for the federal 24-hour standard is shown below in Table 7. As shown in Table 8, the Ventura County APCD air monitoring network exceeds the minimum monitoring requires set forth in 40 CFR Part 58 for PM₁₀.

Table 9
Historical PM₁₀ Values
24-Hour Average
National Standard = 150 µg/m³

Air Monitoring Site	Est. Days > 24-Hour Average Year			Maximum 24-Hour Average Year		
	2004	2005	2006	2004	2005	2006
El Rio	0	0	0	59.6	54	119.4
Ojai	0	0	0	43.8	60.4	46.4
Piru	0	--	--	50.5	--	--
Simi Valley	0	0	0	48.7	76	56.9
Thousand Oaks	0	--	--	68.6	--	--

⁴ 40 CF Part 58, Appendix D, Section 4.7 and Table D-5

Table 10
Minimum Monitoring Requirements for PM₁₀

MSA	Population (2000)	Min. # Monitors Required	# Monitors Active	# Monitors Needed
Oxnard- Thousand Oaks- Ventura MSA	752,445	1 - 2 ⁵	3	0

2.2.4 Carbon Monoxide

The District previously operated monitors to measure levels of CO at the El Rio, Simi Valley and Ojai monitoring sites. Because of the low levels recorded, CO monitoring at these sites ceased in March and July 2004.

40 CFR 58, Appendix D, Section 4.2 states that there are no minimum requirements for the number of CO monitoring sites. There are no monitors required for SIP of Maintenance planning.

2.2.5 Nitrogen Dioxide

The District previously operated monitors to measure levels of NO₂ at the Ojai, Ventura and Thousand Oaks monitoring sites. Because of the low levels recorded, NO₂ monitoring at these sites ceased in July 2004. The District currently monitors for NO₂ at El Rio and Simi Valley monitoring sites.

40 CFR 58, Appendix D, Section 4.3 states that there are no minimum requirements for the number of NO₂ monitoring sites. There are no monitors required for SIP of Maintenance planning.

2.2.6 Sulfur Dioxide

The District previously operated a monitor to measure levels of SO₂ at the El Rio monitoring site. Because of the low levels recorded, SO₂ monitoring ceased in July 2004.

40 CFR 58, Appendix D, Section 4.4 states that there are no minimum requirements for the number of SO₂ monitoring sites. There are no monitors required for SIP of Maintenance planning.

⁵ 40 CFR Part 58, Appendix D, Section 4.6 and Table D-4

3.0 Recent or Proposed Modifications to Network.

In 2003, District staff conducted an assessment of the Ventura County air monitoring network, in consultation with EPA, Region IX staff, in anticipation of the new requirements of 40 CFR Part 58. The District determined that the existing network should be reduced to prepare for anticipated future monitoring program increases. On June 24, 2004, EPA, Region IX approved the reductions to the County's air monitoring network. Those reductions are shown below:

Parameter	Location	Shutdown Date
PM ₁₀	Thousand Oaks – Moorpark Road	July 22, 2004
	Piru – Pacific Avenue	July 27, 2004
Sulfur Dioxide	El Rio – Rio Mesa School #2	July 28, 2004
Carbon Monoxide	El Rio – Rio Mesa School #2	March 21, 2004
	Simi Valley – Cochran Street	March 28, 2004
Nitrogen Oxides	Ojai – Ojai Avenue	July 28, 2004
	Ventura – Emma Wood State Beach	July 29, 2004
	Thousand Oaks – Moorpark Road	July 22, 2004

Since 1999 the District has added continuous monitoring for PM_{2.5} at the Ojai, Piru, El Rio, Simi Valley and Thousand Oaks monitoring stations. Addition of continuous PM_{2.5} monitoring was to provide daily forecasts of PM_{2.5} levels and air quality index.

The District is considering discontinuation monitoring operations of the Ventura (Emma Wood) monitoring station. The station sits within 200 yards of the ocean and the shelter is suffering from exposure to the elements. The site is also located within 200 yards of a major railroad line and within 300 yards of a major freeway. This site has not registered a violation of the federal eight-hour ozone standard since 1998. District staff believes that the coastal area of Ventura County can be equally served by the El Rio monitoring station. The District will work with EPA and ARB prior to discontinuing operation of the Ventura monitoring station. The public will be given a chance to provide comment on any such change.

3.1 Review of Changes to PM_{2.5} Monitoring Network.

Ventura County APCD has designed its PM_{2.5} monitoring network to provide either continuous or FRM monitoring at five of its air monitoring stations. The only air monitoring station not equipped with either a continuous or FRM monitor is the station in Ventura (Emma Wood State Beach). The District has designed its PM_{2.5} monitoring network to provide coverage for a majority of the County's population. As previously noted, since 1999 the District has installed continuous monitoring for PM_{2.5} at the Ojai, Piru, El Rio, Simi Valley and Thousand Oaks monitoring stations.

Through the California Air Resources Board the District will be requesting that the PM_{2.5} sampling frequency at the Thousand Oaks and Piru monitoring stations be reduced from a one-in-three schedule to a one-in-six schedule. The request will be made based upon the historically low concentrations measured at these stations.

4.0 Data Submission Requirements

Precision reports submitted to EPA's AQS on a monthly basis. Accuracy reports are submitted by the California Air Resources Board.

The District's annual data certification was submitted to EPA on June 26, 2007.

Appendix A

Detailed Site Information

Detailed Site Information

El Rio – Rio Mesa School #2

The El Rio monitoring site is located 7 miles inland in the broad Oxnard Plain area, covering 290 square miles and home to 207,000 people (2000 Census data) – approximately 27.5 percent of the County's population. The District currently operates samplers to collect ambient data for ozone, PM₁₀, PM_{2.5}, continuous PM_{2.5}, nitrogen dioxide, non-methane hydrocarbons, volatile organic compounds (canisters), and carbonyls. The District also collects meteorological measurements at the site (wind speed, wind direction, temperature, relative humidity, and solar radiation).

The District has conducted oxidant and ozone sampling in the Ventura/Oxnard Plain area since 1969. The District also has monitored for particulate matter in the Ventura/Oxnard Plain area since 1971 and has operated a Type 2 PAMS site at El Rio since 1994.

Ozone

Typically, this site records the lowest one- and eight-hour ozone levels in Ventura County. The eight-hour ozone design value for this area has been reduced from its peak of 11 pphm to 6.2 pphm in 2006, and the number of days on which the federal eight-hour ozone standard was exceeded has been reduced from 40 days per year in 1973 to none during 2006.

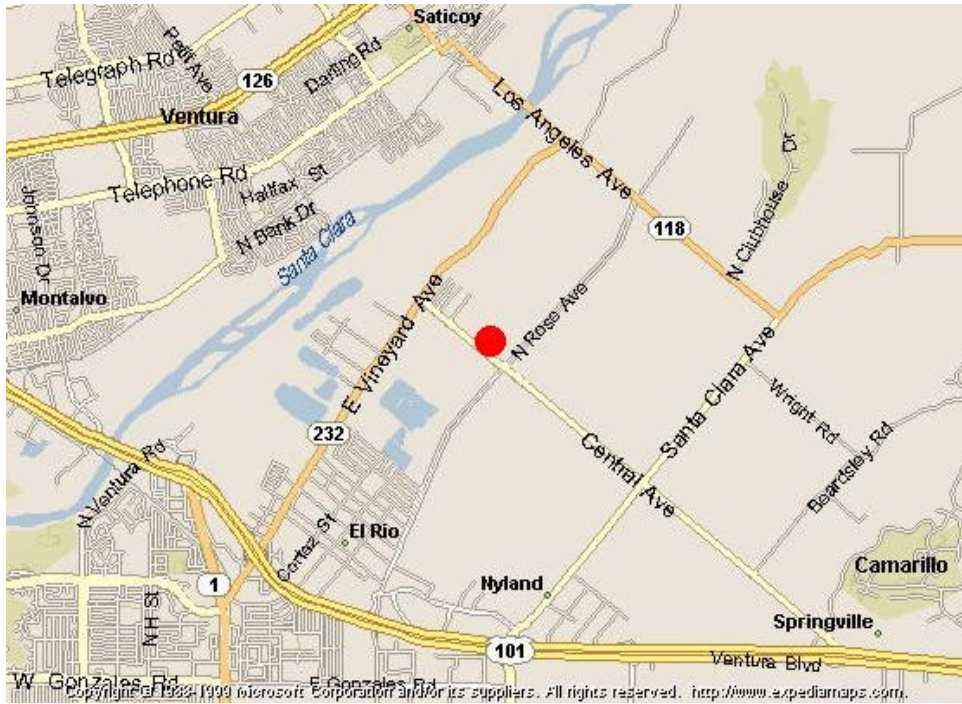
PM_{2.5} and PM₁₀

This site has not exceeded the 24-hour or the annual standards for PM_{2.5}. In 2006 the site's annual design value for the 24-hour PM_{2.5} standard was 24 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) and the annual arithmetic mean was 9.8 $\mu\text{g}/\text{m}^3$.

This site's maximum 24-hour average PM₁₀ has not exceeded the 24-hour PM₁₀ standard. In 2006 the site's maximum level for the 24-hour PM₁₀ standard was 119 $\mu\text{g}/\text{m}^3$.

Site Name	El Rio – Rio Mesa School #2		
AQS ID	061113001		
Grid Coordinates	Latitude: 34° 15' 8" Longitude: 119° 8' 35"		
Location	On school grounds		
Address	545 Central Ave, El Rio CA 93030		
County	Ventura County		
Location Type	Suburban		
Dist. to road	75 meters		
Traffic count	5,000 vehicles/day		
Groundcover	Paved/asphalt		
PEP audit?	11/9/2004, 02/22/2005, 03/02/2005, 05/22/2005 and 08/23/2005		
NPAP audit?	Date		
Flow audit?	Date		
Representative Area	Oxnard Coastal Plain		
Pollutant	Ozone	BAM-PM_{2.5}	PM₁₀-SSI
Monitor Designation	PAMS/ SLAMS		SLAMS
Monitor objective	Population exposure	Population exposure	Population exposure
Spatial scale	Urban Scale	Neighborhood	Urban Scale
Sampling method	API/Teledyne 400	Met One 1020 BAM	Anderson SA1200
Analysis method	Ultraviolet Absorption	Beta Attenuation	Size selective inlet
Start date	01/01/1979	01/01/2005	04/03/1988
Operation schedule	Continuous	Continuous	1:6
Sampling season	Year-round	Year-round	Year-round
Probe height	4.3 meters	4.7 meters	5.5 meters
Distance from supporting structure	1.2 meters	1.7 meters	1.9 meters
Distance from obstructions on roof	None	None	None
Distance from obstructions not on roof	None	None	None
Distance from trees	15 meters	15 meters	15 meters
Distance between collocated monitors	N/A	N/A	N/A
Unrestricted airflow	360 degrees	360 degrees	360 degrees
Probe material	Borosilicate glass & FEP Teflon	N/A	N/A
Residence time	7.5 seconds	N/A	N/A
Will there be changes within the next 18 months?	No	No	No
Is it suitable for comparison against the annual PM _{2.5} ?	N/A	N/A	N/A

Pollutant	FRM PM_{2.5}	Nitrogen Dioxide
Monitor Designation	SLAMS	PAMS/SLAMS
Monitor objective	Population exposure	Population exposure
Spatial scale	Neighborhood	Urban Scale
Sampling method	Anderson RAAS PM _{2.5}	API 200A
Analysis method	Size selective inlet	Chemiluminescent
Start date	01/01/1999	01/01/1980
Operation schedule	1:3	Continuous
Sampling season	Year-round	Year-round
Probe height	5.5 meters	4.3 meters
Distance from supporting structure	1.9 meters	1.2 meters
Distance from obstructions on roof	None	None
Distance from obstructions not on roof	None	None
Distance from trees		
Distance between collocated monitors	N/A	N/A
Unrestricted airflow	360 degrees	360 degrees
Probe material	N/A	Borosilicate glass & FEP Teflon
Residence time	N/A	9 seconds
Will there be changes within the next 18 months?	No	No
Is it suitable for comparison against the annual PM _{2.5} ?	Yes	N/A



Detailed Site Information

Ojai –Ojai Avenue

The Ojai air monitoring site is located 14 miles from the coast in the Ojai Valley area, which covers 102 square miles and is home to 30,000 people – approximately 4 percent of the County's population. The District currently operates samplers to collect ambient ozone, PM_{2.5} and PM₁₀ data. The District also collects meteorological measurements (wind speed, wind direction, temperature, relative humidity, solar radiation, and precipitation) at the site.

The District has operated oxidant and ozone monitors in the Ojai Valley since 1970. (Oxidant sampling was also conducted in the Ojai Valley for a one-year period during the mid-1960s.) The District also has monitored for particulate matter in the Ojai Valley since 1973.

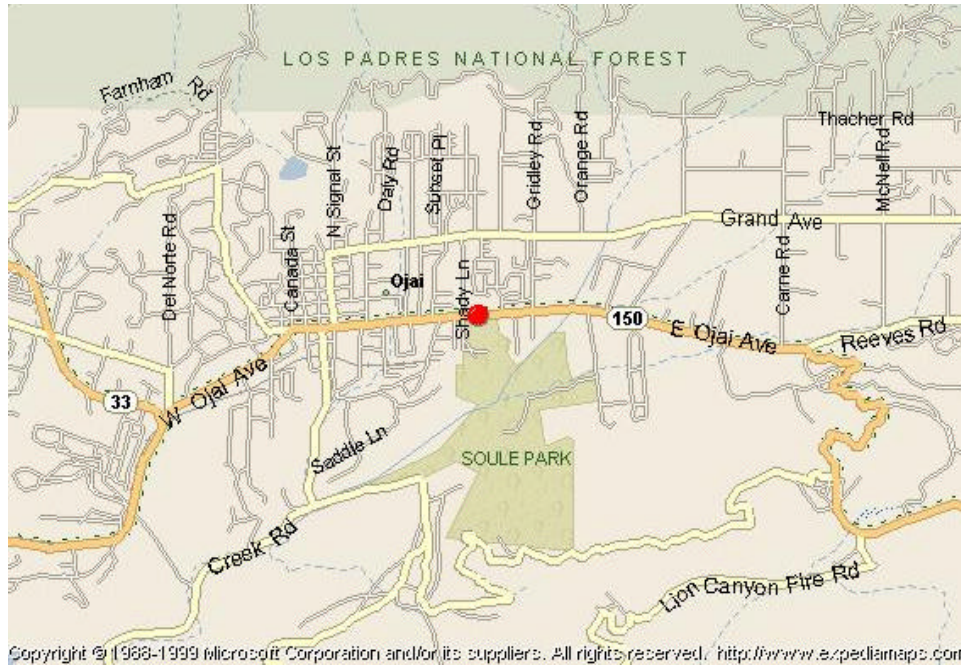
Ozone

Typically, this site records the second highest one- and eight-hour ozone levels in Ventura County, but recently has collected the highest eight-hour ozone concentrations. The one-hour ozone design value has been reduced from its peak of 0.22 ppm to 0.09 ppm in 2006. However, the site's 2006 eight-hour ozone design value still exceeds the federal eight-hour ozone standard and is the same as Simi Valley's design value. During 2006, eight-hour ozone concentrations at Ojai exceeded the level of the federal standard on six days.

PM_{2.5} and PM₁₀

This site's maximum 24-hour average PM₁₀ has not exceeded the 24-hour PM₁₀ standard. In 2006 the site's maximum level for the 24-hour PM₁₀ standard was 46 µg/m³.

Site Name	Ojai - Ojai Avenue		
AQS ID	061111004		
Grid Coordinates	Latitude: 34° 26' 53" Longitude: 119° 13' 53"		
Location	In shed, on school, etc.		
Address	1201 Ojai Ave., Ojai CA 93023		
County	Ventura County		
Location Type	Suburban		
Dist. to road	250 meters		
Traffic count	7,700 vehicles/day		
Groundcover	Paved		
PEP audit?	Date		
NPAP audit?	Date		
Flow audit?	Date		
Representative Area	Ojai Valley		
Pollutant	Ozone	BAM PM_{2.5}	PM₁₀-SSI
Monitor designation	SLAMS		SLAMS
Monitor objective	Population exposure	Population exposure	Population exposure
Spatial scale	Urban	Neighborhood	Urban
Sampling method	API Teledyne 400	Met One 1020 BAM	Anderson SA1200
Analysis method	Ultraviolet absorption	Beta Attenuation	Size Selective Inlet
Start date	04/01/1996	05/17/2006	04/01/1996
Operation schedule	Continuous	Continuous	1:6
Sampling season	Year-round	Year-round	Year-round
Probe height	4.0 meters	4.1 meters	4.1 meters
Distance from supporting structure	1.0 meters	1.5 meters	1.5 meters
Distance from obstructions on roof	None	None	None
Distance from obstructions not on roof	None	None	None
Distance from trees	10.5 meters	10.5 meters	10.5 meters
Distance between collocated monitors	N/A	N/A	N/A
Unrestricted airflow	360 degrees	360 degrees	360 degrees
Probe material	Borosilicate glass & FEP Teflon	N/A	N/A
Residence time	7.8 seconds	N/A	N/A
Will there be changes within the next 18 months?	No	No	No
Is it suitable for comparison against the annual PM _{2.5} ?	N/A	N/A	N/A



Detailed Site Information

Piru – Pacific Avenue

This site is located 28 miles from the coast in the Santa Clara River Valley, covering 204 square miles and home to 49,000 people – approximately 15.4 percent of the County’s population. The District currently operates samplers to collect ambient ozone and PM_{2.5} data. The District also collects meteorological measurements at the site (wind speed, wind direction, temperature, relative humidity, solar radiation, and precipitation).

The District has conducted oxidant and ozone sampling in the Santa Clara River Valley since 1972. The District also has monitored for particulate matter in the Santa Clara River Valley since 1973, with limited sampling for a one-year period during the mid-1960s.

Ozone

Typically, this site records the third or fourth highest one- and eight-hour ozone levels in Ventura County. The site’s eight-hour ozone design value of 0.084 ppm in 2006 is slightly lower than the federal eight-hour ozone standard. During 2006, ozone concentrations at the Piru monitoring site exceeded the level of the federal standard on five days.

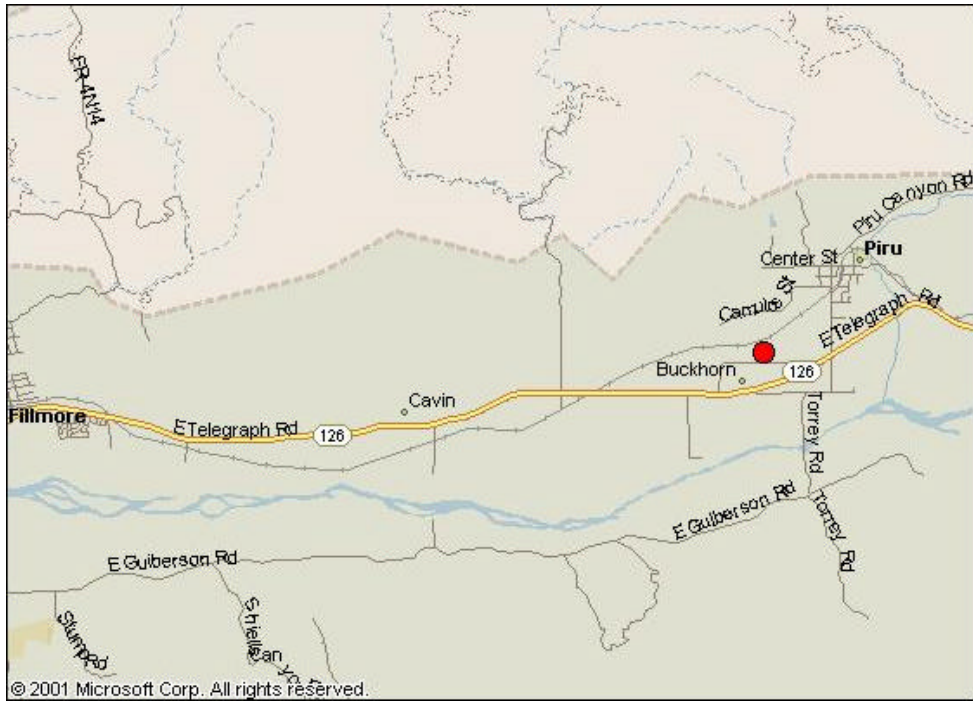
PM_{2.5} and PM₁₀

This site has not exceeded the 24-hour or the annual standards for PM_{2.5}. In 2006 the site’s annual design value for the 24-hour PM_{2.5} standard was 21 µg/m³ and the annual arithmetic mean was 9.3 µg/m³.

Monitoring for PM₁₀ at this site was discontinued in July 2004.

Site Name	Piru – Pacific Avenue		
AQS ID	061110009		
Grid Coordinates	Latitude: 34° 24' 16" Longitude: 118° 48' 36"		
Location	In shed, on school, etc.		
Address	Pacific Ave., Piru CA		
County	Ventura County		
Location Type	Rural		
Dist. to road	100 meters		
Traffic count	22,000 vehicles/day		
Groundcover	Gravel		
PEP audit?	02/22/2005 and 05/17/2005		
NPAP audit?	Date		
Flow audit?	Date		
Representative Area	Santa Clara River Valley		
Pollutant	Ozone	BAM PM_{2.5}	FRM PM_{2.5}
Monitor designation	SLAMS		SLAMS
Monitor objective	High concentration	Population exposure	Population exposure
Spatial scale	Urban scale	Neighborhood	Neighborhood
Sampling method	API Teledyne 400	Met One 1020 BAM	Anderson SA1200
Analysis method	Ultraviolet absorption	Beta Attenuation	Size Selective Inlet
Start date	11/03/2000	05/26/2006	11/01/2000
Operation schedule	Continuous	Continuous	1:3 ⁶
Sampling season	Year-round	Year-round	Year-round
Probe height	3.8 meters	4.0 meters	4.0 meters
Distance from supporting structure	1.4 meters	1.5 meters	1.5 meters
Distance from obstructions on roof	None	None	None
Distance from obstructions not on roof	None	None	None
Distance from trees	28 meters	28 meters	28 meters
Distance between collocated monitors	N/A	N/A	N/A
Unrestricted airflow	360 degrees	360 degrees	360 degrees
Probe material	Borosilicate glass & FEP Teflon	N/A	N/A
Residence time	9.9 seconds	N/A	N/A
Will there be changes within the next 18 months?	No	No	See footnote
Is it suitable for comparison against the annual PM _{2.5} ?	N/A	N/A	Yes

⁶ The District will be requesting, through the California Air Resources Board, that the sampling frequency be reduced to 1:6.



Detailed Site Information

Simi Valley – Cochran Street

Simi Valley. The Simi Valley air monitoring site is located 34 miles from the coast in the Simi Valley area, which covers 142 square miles and is home to 148,000 people – approximately 20 percent of the County's population. The site covers the cities of Simi Valley and Moorpark. The District currently operates samplers to collect ambient data for ozone, PM₁₀, PM_{2.5}, continuous PM_{2.5}, speciated PM_{2.5}, nitrogen dioxide, non-methane hydrocarbons, volatile organic compounds (canisters), and air toxics.

In addition to sampling for gaseous and particulate air pollutants, the District collects meteorological measurements (wind speed, wind direction, temperature, relative humidity, solar radiation, and visibility) at the site. At the Simi Valley Upper Air Site, seven miles to the west, the District operates an atmospheric profiler, which collects wind and temperature data from 60 meters to 2,000 meters above the surface. At the surface, we collect additional meteorological data (wind speed, wind direction, temperature, relative humidity, solar radiation, precipitation, ultraviolet radiation, and atmospheric pressure).

The District has continuously operated ozone monitors at the same location in Simi Valley since 1973. The District also has monitored for particulate matter at the same location since 1973, and has operated a Type 3 PAMS (Photochemical Assessment Monitoring Station) site since 1995. In addition, the site is designated a national fine particle speciation trends network site.

Ozone

This site typically records the highest one- and eight-hour ozone levels, the highest PM_{2.5} levels, and some of the highest PM₁₀ levels in Ventura County. While the one-hour ozone design value has been reduced from its peak of 0.23 ppm to 0.121 ppm in 2006, its 2006 eight-hour ozone design value of 0.09 ppm still exceeds the federal eight-hour ozone standard. During 2006, ozone concentrations at Simi Valley exceeded the level of the federal eight-hour standard on 13 days.

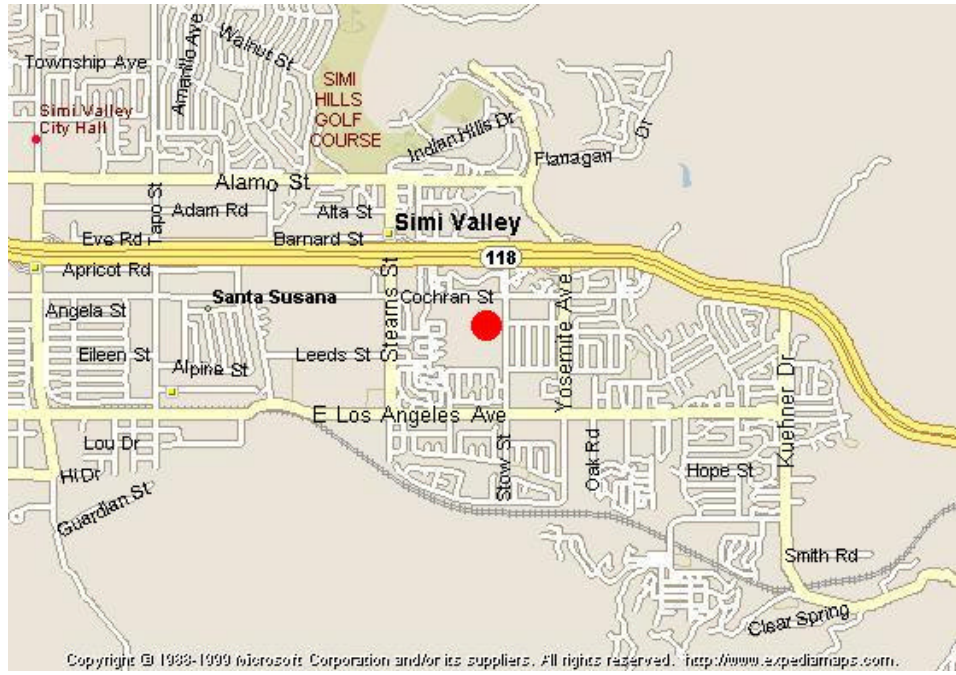
PM_{2.5} and PM₁₀

This site has not exceeded the 24-hour or the annual standards for PM_{2.5}. In 2006 the site's annual design value for the 24-hour PM_{2.5} standard was 28 µg/m³ and the annual arithmetic mean was 10.3 µg/m³.

In 2006 the site's maximum level for the 24-hour PM₁₀ standard was 22 µg/m³.

Site Name	Simi Valley – Cochran Street		
AQS ID	061112002		
Grid Coordinates	Latitude: 34° 16' 34" Longitude: 118° 41' 1"		
Location	On school grounds		
Address	5400 Cochran St., Simi Valley CA 93063		
County	Ventura County		
Location Type	Suburban		
Dist. to road	140 meters		
Traffic count	10,000 vehicles/day		
Groundcover	Gravel		
PEP audit?	02/22/2005 and 05/17/2005		
NPAP audit?	Date		
Flow audit?	PM ₁₀ flow audit on 07/22/2005		
Representative Area	Simi Valley		
Pollutant	Ozone	Nitrogen Dioxide	PM₁₀-SSI
Monitor designation	PAMS/SLAMS	PAMS/SLAMS	SLAMS
Monitor objective	High concentrations	High concentrations	High concentrations
Spatial scale	Urban	Urban	Neighborhood
Sampling method	API Teledyne 400	API 200A	Tisch PM ₁₀
Analysis method	Ultraviolet Absorption	Chemiluminescent	Size Selective Inlet
Start date	06/01/1985	06/01/1985	11/04/1986
Operation schedule	Continuous	Continuous	1:6
Sampling season	Year-round	Year-round	Year-round
Probe height	3.9 meters	3.9 meters	4.8 meters
Distance from supporting structure	1.3 meters	1.3 meters	1.5 meters
Distance from obstructions on roof	None	None	None
Distance from obstructions not on roof	None	None	None
Distance from trees	61 meters	61 meters	73 meters
Distance between collocated monitors	N/A	N/A	3.5 meters
Unrestricted airflow	360 degrees	360 degrees	360 degrees
Probe material	Borosilicate glass & FEP Teflon	Borosilicate glass & FEP Teflon	N/A
Residence time	7.9 seconds	8.3 seconds	N/A
Will there be changes within the next 18 months?	No	No	No
Is it suitable for comparison against the annual PM _{2.5} ?	N/A	N/A	N/A

Pollutant	BAM PM_{2.5}	FRM PM_{2.5}
Monitor designation		SLAMS
Monitor objective	Population exposure	High concentration
Spatial scale	Neighborhood	Neighborhood
Sampling method	Met One 1020 BAM	Anderson RAAS 2.5-300
Analysis method	Beta Attenuation	Size Selective Inlet
Start date	01/01/2004	01/01/1999
Operation schedule	Continuous	1:3
Sampling season	Year-round	Year-round
Probe height	4.7 meters	4.7 meters
Distance from supporting structure	1.4 meters	1.4 meters
Distance from obstructions on roof	None	None
Distance from obstructions not on roof	None	None
Distance from trees	61 meters	73 meters
Distance between collocated monitors	N/A	meters
Unrestricted airflow	360 degrees	360 degrees
Probe material	N/A	N/A
Residence time	N/A	N/A
Will there be changes within the next 18 months?	No	No
Is it suitable for comparison against the annual PM _{2.5} ?	N/A	Yes



Detailed Site Information

Thousand Oaks – Moorpark Road

This site is located 21 miles inland in the Conejo Valley, covering 75 square miles and home to 138,000 people – approximately 18.3 percent of the County's population. The District currently operates samplers to collect ambient ozone and PM_{2.5} data. The District also collects meteorological measurements at the site (wind speed, wind direction, temperature, relative humidity, solar radiation, and precipitation).

The District has conducted ozone sampling in the Conejo Valley since 1973. The District also has monitored for particulate matter in the Conejo Valley since 1979, with limited sampling prior to that.

Ozone

Typically, this site records the third or fourth highest one- and eight-hour ozone levels in Ventura County. The one-hour ozone design value has been reduced from its peak of 0.19 ppm to 0.104 ppm in 2004. The site's eight-hour ozone design value of 0.079 ppm in 2006 attains the federal eight-hour ozone standard. With a maximum eight-hour ozone concentration of 0.083 ppm in 2006, the Thousand Oaks air monitoring station did not exceed the federal eight-hour standard.

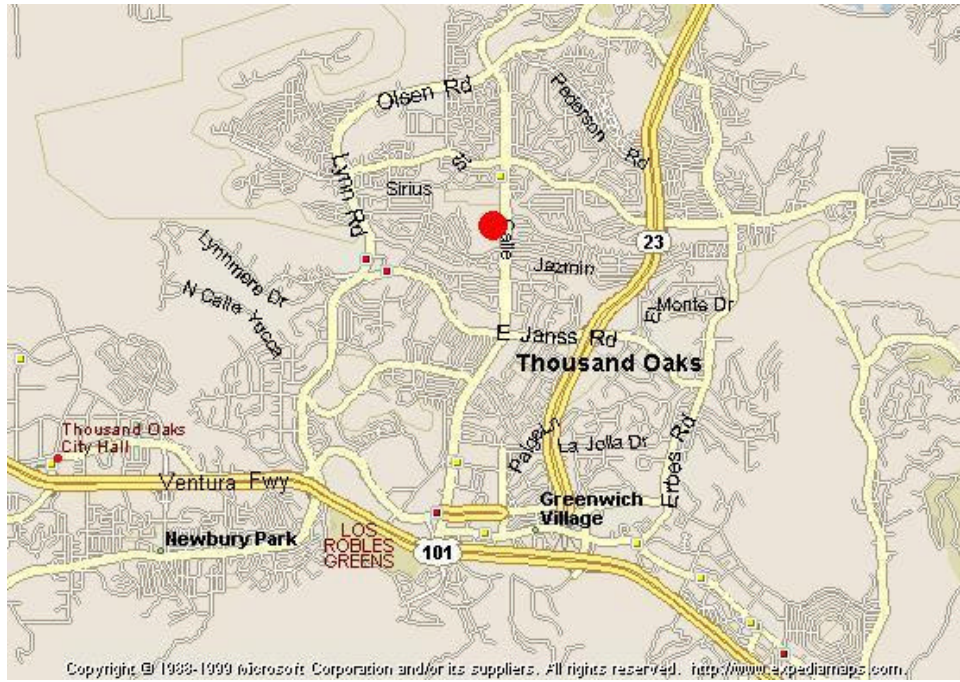
PM_{2.5} and PM₁₀

This site has not exceeded the 24-hour or the annual standards for PM_{2.5}. In 2006 the site's annual design value for the 24-hour PM_{2.5} standard was 23 µg/m³ and the annual arithmetic mean was 10.1 µg/m³.

Monitoring for PM₁₀ at this site was discontinued in July 2004.

Site Name	Thousand Oaks – Moorpark Road		
AQS ID	061110007		
Grid Coordinates	Latitude: 34° 12' 37" Longitude: 118° 52' 14"		
Location	On school grounds		
Address	2323 Moorpark Rd., Thousand Oaks CA		
County	Ventura County		
Location Type	Suburban		
Dist. to road	175 meters		
Traffic count	7,000 vehicles/day		
Groundcover	Asphalt		
PEP audit?	02/22/2005 and 05/17/2005		
NPAP audit?	Date		
Flow audit?	Date		
Representative Area	Conejo Valley		
Pollutant	Ozone	BAM PM_{2.5}	FRM PM_{2.5}
Monitor designation	SLAMS		SLAMS
Monitor objective	Population exposure	Population exposure	Population exposure
Spatial scale	Urban	Neighborhood	Neighborhood
Sampling method	API Teledyne 400	Met One 1020 BAM	Anderson RAAS PM2.5
Analysis method	Ultraviolet Absorption	Beta Attenuation	Size Selective Inlet
Start date	03/01/1992	May 2007	01/01/1999
Operation schedule	Continuous	Continuous	1:3 ⁷
Sampling season	Year-round	Year-round	Year-round
Probe height	5.0 meters	5.0 meters	5.0 meters
Distance from supporting structure	1.5 meters		1.5 meters
Distance from obstructions on roof	None	None	None
Distance from obstructions not on roof	None	None	None
Distance from trees	N/A	N/A	N/A
Distance between collocated monitors	N/A	N/A	2.0 meters
Unrestricted airflow	360 degrees	360 degrees	360 degrees
Probe material	Borosilicate glass & FEP Teflon	N/A	N/A
Residence time	11.4 seconds	N/A	N/A
Will there be changes within the next 18 months?	No	No	See footnote
Is it suitable for comparison against the annual PM _{2.5} ?	N/A	N/A	Yes

⁷ The District will be requesting, through the California Air Resources Board, that the sampling frequency be reduced to 1:6.



Detailed Site Information

Ventura - Emma Wood State Beach

The Ventura monitoring site is located along the coast at Emma Wood State Beach, and represents a coastal area covering 114 square miles and home to 180,000 people – approximately 24 percent of the County's population. The District operates samplers to collect ambient data for ozone, and volatile organic compounds (canisters). The District also collects meteorological measurements (wind speed, wind direction, temperature, relative humidity, and solar radiation).

The District has conducted oxidant and ozone sampling in the coastal area since 1972 at locations ranging from Point Mugu to La Conchita. Most of the monitoring, however, has occurred at sites in the Ventura area. In addition, limited sampling for oxidants was conducted in the area during the mid- and late-1960s and early 1970s. The District also has operated a Type 1 PAMS site at the Emma Wood Beach site since 1996.

The eight-hour ozone design value for the Ventura County coastal area has been reduced from its peak of 0.103 ppm to 0.064 ppm in 2006, and the number of days on which the federal eight hour ozone standard was exceeded has been reduced from 20 days per year in 1983 to none in 2006.

Site Name	Ventura - Emma Wood State Beach
AQS ID	061112003
Grid Coordinates	Latitude: 34° 16' 50" Longitude: 119° 18' 55"
Location	State Park
Address	Emma Wood State Beach, Ventura CA
County	Ventura County
Location Type	Suburban
Dist. to road	90 meters
Traffic count	175,000 vehicles/day
Groundcover	Grass and vegetation
PEP audit?	Date
NPAP audit?	Date
Flow audit?	Date
Representative Area	Ventura Coastal
Pollutant	Ozone
Monitor designation	PAMS/SLAMS
Monitor objective	General/Background
Spatial scale	Neighborhood
Sampling method	API/Teledyne 400
Analysis method	Ultraviolet Absorption
Start date	03/01/1984
Operation schedule	Continuous
Sampling season	Year-round
Probe height	4.0 meters
Distance from supporting structure	1.0 meters
Distance from obstructions on roof	None
Distance from obstructions not on roof	None
Distance from trees	N/A
Distance between collocated monitors	N/A
Unrestricted airflow	360 degrees
Probe material	Borosilicate glass & FEP Teflon
Residence time	10.5 seconds
Will there be changes within the next 18 months?	The District is considering whether to discontinue operation of this site. Prior to taking such action, the District will work with EPA and ARB. The public will be given a chance to provide comment on any such change.



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Detailed Site Information

Simi Valley – Upper Air Monitoring Station

Site Name	Simi Valley – Upper Air Monitoring Station
AQS ID	061110008
Grid Coordinates	Latitude: 34° 17' 28" Longitude: 118° 47' 51"
Location	At Simi Valley Landfill
Address	2801 Madera Rd., Simi Valley CA
County	Ventura County

