

air pollution control district
SANTA BARBARA COUNTY



Annual Air Monitoring Network Plan for Santa Barbara County

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Draft

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1.0 Introduction

This report was prepared to meet the requirements for an annual criteria pollutant air monitoring network plan as listed in federal ambient air monitoring regulations (Title 40, Part 58, Section 10 of the Code of Federal Regulations (40 CFR 58.10)). This review is used to determine whether the State and Local Air Monitoring Station (SLAMS) network in Santa Barbara County meets the U.S. Environmental Protection Agency (EPA) criteria for station siting based on the EPA monitoring objectives. The network review ensures that the data collected by the SLAMS air monitoring network in Santa Barbara County is representative and will satisfy specific monitoring objectives of EPA, California Air Resources Board (CARB), and the Santa Barbara County Air Pollution Control District (District). This network plan includes SLAMS and Special Purpose Monitors (SPM) which are federal reference methods (FRM), federal equivalent methods (FEM), or approved regional methods (ARM). The report also provides information on air monitoring in Santa Barbara County that is not considered SLAMS monitors.

The language of 40 CFR 58.10 is included in Appendix A of this report. The regulations require that this annual monitoring network plan be submitted to the U.S. Environmental Protection Agency (EPA) by July 1 of each year. The plan must be made available for public inspection for at least 30 days prior to submission to EPA. A draft plan is available for public review and comment from May 31 through June 29, 2023. Email notification was sent to the District's Public Notices listserv and the plan was available for review at the APCD office at 260 N San Antonio Rd, Santa Barbara, CA, 93110, and also on the APCD website: www.ourair.org/news. The public notices can be found in Appendix C.

Industrial, special study, hydrogen sulfide, and "other" monitors are also included in this plan for informational purposes. Special study monitors operated by the District are typically short-term monitoring projects, that are non-SLAMS monitors, and the data is typically not submitted to EPA's Air Quality System (AQS). The Industrial and "other" monitors in Santa Barbara County consist of several stations operated by the District or private contractors. There are several major oil and gas developments in Santa Barbara County with permits for the production, processing and transportation of oil and gas. The Industrial stations are designed to measure regional air quality in addition to criteria pollutants from these oil and gas facilities; the "other" stations are designed to measure odorous compounds from these facilities. Operating permits for the oil and gas facilities require the industrial and "other" monitors to be operated for the life of the permitted facility. These Industrial and "other" monitors are not utilized for comparison to national ambient air quality standards (NAAQS), are not counted in assessing minimum monitoring requirements, and are considered secondary monitors by EPA. The District expects special study, Industrial, and "other" monitors to meet the same quality control requirements as SLAMS monitors. Appendix E of this document provides a detailed

description of special study, Industrial, “other” monitors, and low-cost sensor monitoring in Santa Barbara County.

1.1 SLAMS Network Design

The air monitoring network in Santa Barbara County consists of SLAMS monitors operated by the District and private contractors. The monitoring network is designed to cover the diverse range of topography, meteorology, emissions, and air quality in Santa Barbara County, while adequately representing the population in the county.

Santa Barbara County has agreed to coordinate the air monitoring network design with CARB through the joint Primary Quality Assurance Organization (PQAO) Roles and Responsibilities agreement between the two agencies. Item 5 of this agreement stipulates that both agencies will coordinate any changes to the network, assuring that the requirements of the network design are met. Complete details of the Roles and Responsibilities can be obtained from the following link: <https://ww2.arb.ca.gov/our-work/programs/quality-assurance/qm-document-repository/quality-assurance-roles-responsibility>.

This network review is used to determine whether the monitoring system meets the monitoring objectives defined in 40 CFR 58 Appendix D. The three basic monitoring objectives as described in Appendix D are:

- 1) Provide air pollution data to the general public in a timely manner;
- 2) Support compliance with ambient air quality standards and emissions strategy development; and,
- 3) Support for air pollution research studies.

1.2 SLAMS Stations

In order to support the air quality management work indicated in the three basic air monitoring objectives, the network is designed with a variety of monitoring station types. There are six general types:

- 1) Highest concentrations expected to occur in the area;
- 2) Typical concentrations in areas of high population density;
- 3) Impact of significant sources on air quality;
- 4) General background concentration levels;
- 5) Regional pollutant transport among populated areas; and,

6) Air pollution impact on visibility, vegetation damage or other welfare-based impacts.

During 2018 and 2019, the District worked with CARB and EPA to modify the monitoring network to streamline resources from redundant and non-essential monitors while maintaining one of the most extensive air monitoring networks in the state. In February 2019, the District received EPA approval to shut down some monitors, change some Industrial monitors approved for shutdown to non-NAAQS compliant (removing CARB and EPA oversight), and change the ozone (O₃) monitors at Paradise Road, Carpinteria, and Las Flores Canyon #1 from Industrial to SLAMS monitors. Additionally, the District agreed to develop a transition plan to take responsibility for the operation of the Santa Barbara and Santa Maria SLAMS monitoring stations that were historically operated by CARB. The District took responsibility for the Santa Barbara station in January 2020. CARB shut down the Santa Maria site on February 28, 2021 and the District started operating a new Santa Maria site location in October 2022. The District selected a new location for the Santa Maria site due to the CARB site location not meeting siting criteria as noted in previous network reviews. The new Santa Maria site is located at 3700 Orcutt Rd, Santa Maria 93455 (Lat/Long is 34.890667/-120.4328444 elevation 294 ft.). The other changes to the monitoring network were implemented in March 2019. This report details the network following implementation of these network modifications.

After the network modifications in March 2019, there are now 8 ambient air monitoring stations with SLAMS monitors located in Santa Barbara County. Figure 1.1 shows the location of the SLAMS stations on a map of Santa Barbara County. Table 1.1 lists the sites in Santa Barbara County after the network modification and identifies the station's EPA AQS identification code, type of station, and operator. These stations are operated for different objectives. The stations with SLAMS monitors are sited to measure the typical concentrations in areas of high population density and/or to measure the highest values for a pollutant. Appendix E provides details on non-SLAMS monitoring in Santa Barbara County.

Figure 1.1
Map of the SLAMS Monitoring Network in Santa Barbara County for 2022

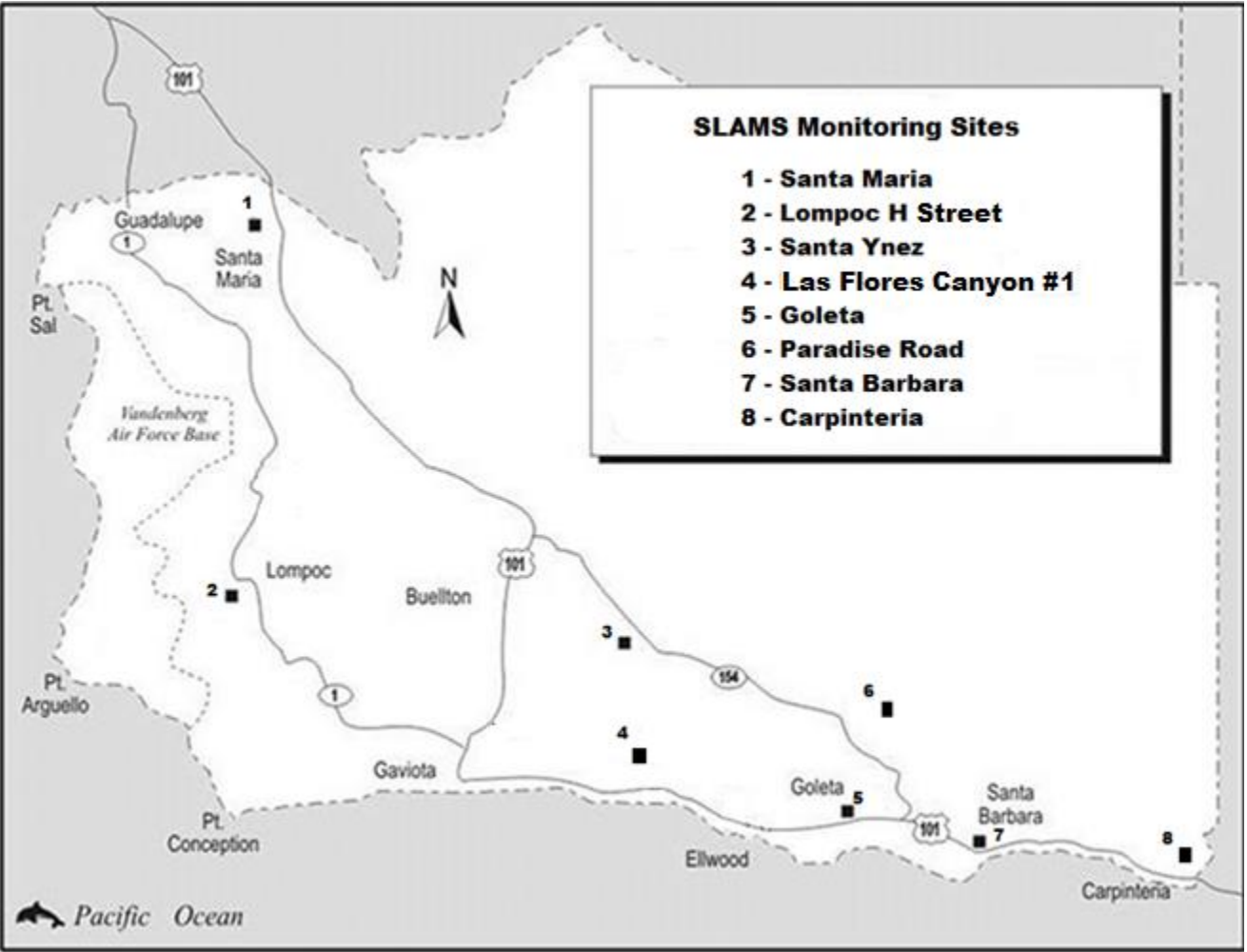


Table 1.1
SLAMS Monitoring Network in Santa Barbara County for 2022

No.	Name	Site Code	Type	Operator
1	Santa Maria	060831009	SLAMS ¹	District
2	Lompoc H Street	060832004	SLAMS	District
3	Santa Ynez	060833001	SLAMS	District
4	Las Flores Canyon #1	060831025	SLAMS ¹	District
5	Goleta	060832011	SLAMS	District
6	Paradise Road	060831014	SLAMS ¹	Contractor
7	Santa Barbara	060830011	SLAMS	District
8	Carpinteria	060831021	SLAMS ¹	District

¹ Ozone monitors at these locations are SLAMS; other monitors at these sites are Industrial.

1.3 Monitors

Many of the stations in the monitoring network serve multiple purposes. They may be ideal for background concentration for one pollutant, while also measuring the impact of transport for another pollutant. To clarify the nature of the link between the general monitoring objectives, station types, and physical location of a monitor, the concept of spatial scale of representativeness is defined. The goal of locating monitors is to correctly match the spatial scale represented by the sample of monitored air with the spatial scale most appropriate for the monitoring station type, air pollutant to be measured, and the monitoring objective. The scales of representativeness of most interest for the monitoring station types are described as follows:

- 1) Micro scale – Defines the concentrations in air volumes associated with area dimensions ranging from several meters up to about 100 meters;
- 2) Middle scale – Defines the concentration typical of areas up to several city blocks in size with dimensions ranging from about 100 meters to 0.5 kilometer;
- 3) Neighborhood scale – Defines concentrations within some extended area of the city that has relatively uniform land use with dimensions in the 0.5 to 4.0 kilometers range;
- 4) Urban scale – Defines concentrations within an area of city like dimensions, on the order of 4 to 50 kilometers; and,
- 5) Regional scale – Defines usually a rural area of reasonably homogeneous geography without large sources, and extends from tens to hundreds of kilometers.

Classification of the monitor by its type and spatial scale of representativeness aids in the interpretation of the monitoring data for a monitoring objective. Table 1.2 illustrates the relationship between the various station types that can be used to support the three basic monitoring objectives and the scales of representativeness that are generally most appropriate for that type of station.

Table 1.2
Relationship between Station Types and Scales of Representativeness

Type	Appropriate Siting Scales
Highest concentration	Micro, middle, neighborhood (sometimes urban or regional for secondarily formed pollutants)
Population oriented	Neighborhood, urban
Source Impact	Micro, middle, neighborhood
General/background and regional transport	Urban, regional
Welfare-related impacts	Urban, regional

The stations and the monitors at each location in Santa Barbara County are listed in Table 1.3. The table includes the spatial scale and monitoring objective for each monitored pollutant.

Table 1.3
SLAMS Measured Parameters with Spatial Scale and Monitoring Objective

Parameter	O ₃	NO ₂	SO ₂	CO	PM _{2.5}	PM ₁₀
AIRS Pollutant Code	44201	42602	42401	42101	88101	81102
Carpinteria	RS/HC					
Goleta	US/PO				NS/PO	NS/PO
Las Flores Canyon # 1	RS/HC					
Lompoc H St.	NS/PO	NS/PO	NS/PO	NS/PO	NS/PO	NS/PO
Paradise Road	RS/HC					
Santa Barbara	US/PO				NS/HC	NS/PO
Santa Maria	US/PO				NS/PO	NS/HC
Santa Ynez	US/PO					

Spatial Scale:

- MI - Microscale
- MS - Middle Scale
- NS - Neighborhood Scale
- US - Urban Scale
- RS - Regional Scale
- NG - National and Global scale

Monitoring Objective:

- HC - Highest concentration
- PO - Population Oriented
- IM - Source Impact
- BL - Background Levels
- WR - Welfare-related impacts

2.0 Monitoring Requirements

EPA regulations specify the minimum number of locations at which state and local air agencies must deploy monitors. Santa Barbara County meets or exceeds EPA's minimum requirements. In practice, state and local agencies find they need to deploy more monitors than required by the law. The additional monitors are needed to fulfill state and local monitoring needs. Several monitors are required by operating permits issued to stationary emission sources. California ambient air quality standards are generally more stringent than national standards and require more monitors to demonstrate compliance with the state standards. Monitors are also used to keep the public informed of the air quality conditions where they live and work. Due to the complex topography and meteorology in Santa Barbara County, more monitors than the minimum required by EPA are needed to properly characterize the air quality in different areas of the county.

The requirements for numbers of monitors appear in Appendix D of Part 58 of the Code of Federal Regulations (CFR). For O₃, PM_{2.5}, and PM₁₀, the required minimum number is based on the population of an area and the severity of the air quality for the pollutant in that area. For other pollutants, no monitoring is required unless an area exceeds or is close to exceeding a national ambient air quality standard. For purposes of the minimum requirements, the areas are defined by the Metropolitan Statistical Areas (MSAs) and Core-Based Statistical Areas (CBSAs) developed by the U.S. Census Bureau. Santa Barbara County is part of the Santa Maria – Santa Barbara MSA and CBSA. It covers the major cities in our county and has a population count of 443,837 based on the 2022 U.S. Census estimate.

All criteria pollutant monitors in Santa Barbara County are sited and operated to meet the requirements outlined in 40 CFR 58 Appendix A, B, C, D, and E where applicable.

2.1 Ozone (O₃)

Data from O₃ monitors in Santa Barbara County are utilized to inform the public on air quality through air quality index (AQI) reporting and air quality mapping. Additionally, the data from these sites are compared to the federal and state standards to assess whether Santa Barbara County is in attainment of those standards.

The minimum monitoring requirements for O₃ are listed in Table 2.1. Santa Barbara County has nine O₃ monitors, with eight of these being SLAMS monitors that meet EPA requirements. Santa Barbara County has a design value of 0.064 ppm for the federal O₃ standard, based on 2020 – 2022 data; this design value meets the federal 8-hour O₃ standard of 0.070 ppm. In January 2023, CARB proposed amendments to area designations for the state ambient air quality standards and recommended that Santa Barbara County be designated as nonattainment – transitional for the state O₃

standards¹. The proposed designation amendment is currently pending the Office of Administrative Law’s approval. No SLAMS monitors in Santa Barbara County recorded concentrations of O₃ in excess of the federal or state 8-hour O₃ standards in 2022. The highest 8-hour O₃ value recorded in Santa Barbara County in 2022 was 0.068 ppm measured at the Paradise Road monitoring station on June 21, 2022.

Table 2.1
Minimum Monitoring Requirements for Ozone

MSA	County	Pop. (year)	8-hour Design Value (years) ²	Design Value Site (name, AQS ID)	Min. # Sites Required	# Sites Active ¹	Sites Needed
Santa Barbara – Santa Maria, CA	Santa Barbara County	443,837 (2022)	.064 ppm 2020 - 2022	Paradise Rd 060831014	2	7	0

¹ Only SLAMS monitors are counted towards meeting minimum monitoring requirements. Also, O₃ monitors that do not meet traffic count/distance requirements to be neighborhood or urban scale (40 CFR 58 Appendix E, Table E-1) are not counted towards minimum monitoring requirements. The Santa Maria (060831008) O₃ monitor did not meet traffic count/distance requirements when operated by CARB and was not operational for most of 2021 and 2022 due to re-location issues. The new Santa Maria site (060831009) started operation on 10/1/22. Therefore, neither Santa Maria site is included in active sites for 2022. See Section 2.9.

² DV Years = the three years over which the design value (DV) was calculated (e.g., 2020 - 2022).

Monitors required for State Implementation Plan (SIP) or Maintenance Plan: Santa Barbara County has a maintenance plan for O₃ that requires any modification to the existing O₃ network to be approved by EPA.

2.2 Carbon Monoxide (CO)

There are no EPA minimum requirements for the number of CO monitoring sites for CBSAs with a population less than one million. For CBSAs with a population of one million or greater, near-roadway CO monitors are required. Continued operation of existing SLAMS CO stations is required until discontinuation is approved by the EPA. In 2022 there was only one SLAMS CO monitor, located at Lompoc H Street. The Lompoc H Street CO monitor is used to measure the impacts of high population exposure and is not a near-roadway monitor. Table 2.2 lists the near-roadway monitoring requirements.

Table 2.2
Near-Roadway Monitoring Requirements

CBSA/MSA	Pop. (year)	# Required Near-Roadway Monitors	# Active Near-Roadway Monitors	# Additional Monitors Needed
Santa Barbara Santa Maria, CA	443,837 (2022)	0	0	0

Monitors required for SIP or Maintenance Plan: None

EPA Regional Administrator-required monitors per 40 CFR 58, App.D 4.2.2: None

2.3 Nitrogen Dioxide (NO₂)

Ambient air monitoring and reporting requirements for NO₂ are based on EPA’s 2010 rule. One “near-road” monitor is required in urban areas with a population greater than or equal to 500,000 people. A second monitor is required near another major road in areas with either a population greater than or equal to 2.5 million people or a road segment with an annual average daily traffic count greater than or equal to 250,000 vehicles. One community-wide monitor is required in urban areas with a population of greater than or equal to 1 million people. Santa Barbara does not meet any of these criteria, so no NO₂ monitors are required. However, continued operation of existing SLAMS NO₂ sites is required until discontinuation is approved by the EPA. There is one SLAMS NO₂ monitor located at Lompoc H Street used to measure the impacts of population exposure. Table 2.3 lists the minimum monitoring requirements for NO₂.

Table 2.3
Minimum Monitoring Requirements for Nitrogen Dioxide

CBSA/MS A	Pop. (year)	Max AADT	# Required Near-Roadway	# Active Near-Roadway	# Additional Near-Roadway needed	# Required Area-wide	# Active Area-wide ¹	# Additional Area-wide needed
Santa Barbara Santa Maria, CA	443,837 (2022)	N/A (below pop. Threshold)	0	0	0	0	1	0

¹ Only SLAMS sites are counted for minimum monitoring requirements.

Monitors required for SIP or Maintenance Plan: None

Monitors required for PAMS: None

EPA Regional Administrator-required monitors per 40 CFR 58, App. D 4.3.4: None

2.4 Sulfur Dioxide (SO₂)

Ambient air monitoring and reporting requirements for SO₂ are based on EPA’s June 2, 2010 rule, where EPA strengthened the primary NAAQS for SO₂. Monitors are required based on CBSAs, using a population-weighted emissions index for the area. Three monitors are required in CBSAs with index values of 1,000,000 or more. Two monitors are required in CBSAs with index values less than 1,000,000 but greater than 100,000. One monitor is required in CBSAs with index values greater than 5,000. Continued operation of existing SLAMS SO₂ sites is required until discontinuation is approved by the EPA. There is one SLAMS SO₂ monitor at Lompoc H Street that is used to measure the impacts of population exposure. Table 2.4 lists the minimum monitoring requirements for SO₂.

Table 2.4
Minimum Monitoring Requirements for Sulfur Dioxide

CBSA/MSA	County	Pop. (year)	Total SO ₂ ¹ (Ton/yr)	Population Weighted Emissions Index ²	Data Requirements Rule Source(s) using Monitoring	# Required Monitors	# Active Monitors ³	# Additional Monitors Required
Santa Barbara Santa Maria, CA	Santa Barbara	443,837 (2022)	239	106.1	N/A below emissions threshold	0	1	0

¹ Using NEI data (2020).

² Calculated by multiplying CBSA population and total SO₂ and dividing product by one million.

³ Only SLAMS sites are counted for minimum monitoring requirement.

Monitors required for SIP or Maintenance Plan: None

EPA Regional Administrator-required monitors per 40 CFR 58, App. D 4.4.3: None

2.5 Particulate Matter (PM₁₀)

The minimum monitoring requirements for PM₁₀ are listed in Table 2.5. There are four SLAMS PM₁₀ monitors located at Santa Barbara, Goleta, Lompoc H Street, and Santa Maria (restarted in October 2022).

Table 2.5
Minimum Monitoring Requirements for PM₁₀

MSA	County	Pop. (year)	Max 24 Hour Concentration (ug/m3)	2022 Max Concentration Site (name, AQS ID)	# Required Sites	# Active Sites ¹	# Additional Sites Needed
Santa Barbara – Santa Maria, CA	Santa Barbara County	443,837 (2022)	73 (10/23/2022)	Santa Maria 060831009	0-1	3	0

¹ Only SLAMS sites are counted for minimum monitoring requirement. Santa Maria operational beginning October 2022 due to relocation, so not counted for 2022 as site did not meet minimum data recovery for 2022.

Monitors required for SIP or Maintenance Plan: None

2.6 Particulate Matter (PM_{2.5})

The minimum monitoring requirements for PM_{2.5} are listed in Tables 2.6a and 2.6b. There are four SLAMS PM_{2.5} monitors located at Santa Barbara, Santa Maria (shut down until October 2022 to relocate due to old CARB site not meeting siting requirements), Goleta, and Lompoc H Street. The annual design value calculations (2020-2022) for these sites are listed in Tables 2.6a and 2.6b.

PM_{2.5} colocation requirements are based on the primary quality assurance organization (PQAO) network. Santa Barbara County is part of the CARB PQAO. See the CARB annual network plan for details on meeting the PM_{2.5} colocation requirements.

Table 2.6a
Minimum Monitoring Requirements for PM_{2.5} Monitors

MSA	County	Pop. (year)	Annual Design Value (years ¹)	Annual Design Value Site (name, AQS ID)	Daily Design Value (years)	Daily Design Value Site (name, AQS ID)	# Required SLAMS Sites	# Active SLAMS Sites ²	# Additional SLAMS Sites Needed
Santa Barbara – Santa Maria, Ca	Santa Barbara County	443,837 (2022)	8.0 ug/m3 2020 – 2022	Santa Barbara 06-083-0011	22 ug/m3 2020 - 2022	Lompoc H 06-083-2004	0	3	0

¹ DV Years = the three years over which the design value (DV) was calculated (e.g., 2019-2021).

² Only SLAMS sites are counted for minimum monitoring requirement. Santa Maria (06-083-1009) operational beginning October 2022, CARB Santa Maria site (06-083-1008) shut down for all of 2022 due to relocation, this results in Santa Maria not meeting daily/annual design calculation requirements, so not counted as SLAMS site.

Monitors required for SIP or Maintenance Plan: None

Table 2.6b
Minimum Monitoring Requirements for Continuous PM_{2.5} Monitors

MSA	County	Pop. (year)	Annual Design Value (years ¹)	Annual Design Value Site (name, AQS ID)	Daily Design Value (years)	Daily Design Value Site (name, AQS ID)	# Required Cont. Monitors	# Active Cont. Monitors ³	# Additional Cont. Monitors ² Needed
Santa Barbara – Santa Maria, Ca	Santa Barbara County	443,837 (2022)	8.0 ug/m3 2020 – 2022	Santa Barbara 06-083-0011	22 ug/m3 2020 - 2022	Lompoc H 06-083-2004	0	3	0

¹ DV Years = the three years over which the design value (DV) was calculated (e.g., 2019-2021).

² Only count one continuous monitor per site.

³ Only SLAMS sites are counted for minimum monitoring requirement. Santa Maria (06-083-1009) operational beginning October 2022, CARB Santa Maria site (06-083-1008) shut down for all of 2022 due to relocation, this results in Santa Maria not meeting daily/annual design calculation requirements, so not counted as SLAMS site.

Monitors required for SIP or Maintenance Plan: None

2.7 Lead (Pb)

The monitoring requirements for lead (Pb) are based on EPA’s 2008 rule. The level of the primary standard is set at 0.15 µg/m³ measured as total suspended particles (TSP). The secondary standard is identical to the primary standard. Source-oriented monitors are required in areas with airport sources that emit one ton or more per year of lead or non-airport sources that emit one-half ton per year of lead. Additionally, non-source lead monitoring is required at NCore sites in a CBSA with a population greater than 500,000. The population of Santa Barbara County is below the 500,000 threshold and there are no NCore sites required in Santa Barbara County; therefore, non-source lead monitors are not required. The highest emission inventory of lead in Santa Barbara

County is for the Santa Barbara Municipal airport with 0.25 tons per year (2020 NEI). Since this is below the threshold, no source-oriented lead monitors are required. Tables 2.7a and 2.7b show the minimum monitoring requirements for lead at NCore and source-oriented sites.

Table 2.7a
Minimum Monitoring Requirements for Pb at NCore sites

CBSA/MSA	Pop. (year)	# Required Near Road Monitors	# Active Near Road Monitors	# Additional Monitors Needed
Santa Barbara – Santa Maria, Ca	443,837 (2022)	0	0	0

Table 2.7b
Minimum Monitoring Requirements for Source-Oriented Pb Monitoring

Source Name	Address	Pb Emissions	Emissions Source (year)	Max Design Value	Design Value Date	# Required Monitors	# Active Monitors	# Additional Monitors Needed
Santa Barbara Municipal Airport	601 Firestone Rd. Santa Barbara, CA	0.25 ton/yr	National Emissions Inventory 2020	N/A	N/A	0	0	0

Monitors required for SIP or Maintenance Plan: None

EPA Regional Administrator-required monitors per 40 CFR 58, App. D 4.5(c): None

2.8 Near-Roadway NO₂, CO, and PM_{2.5} Monitors

40 CFR 58 Appendix D requires near-roadway NO₂, CO, and PM_{2.5} monitors for CBSAs with populations greater than 1,000,000. The Santa Maria – Santa Barbara MSA/CBSA has a population of 443,837 (2022 census estimate), so no NO₂, CO, or PM_{2.5} near-roadway monitors are required. Table 2.8 lists the near-roadway monitoring requirements in Santa Barbara County. No near-roadway monitors are required.

Table 2.8
Near-Roadway Monitor Requirements

CBSA	Population & Census year	Max AADT counts (year)	# Required NO ₂ Mon.	# Active NO ₂ Mon.	# Required PM _{2.5} Mon.	# Active PM _{2.5} Mon.	# Required CO Mon.	# Active CO Mon.	# Additional Monitors Needed
Santa Barbara-Goleta-Santa Maria	443,837 (2022)	N/A Below Pop. Threshold	0	0	0	0	0	0	0

2.9 Recent or Proposed Modifications to the Network

As was noted in the District's 2020 Annual Network Plan, the CARB location of the Santa Maria O₃ and NO₂ monitors did not meet the siting requirements for distance to roadway/traffic counts for neighborhood or larger spatial scale monitors. The District has agreed to take full responsibility for this monitoring station from CARB and moved the station to a new location that will meet the siting criteria. CARB shut down the original Santa Maria station (06-083-1008) on February 28, 2021 and the relocation of the Santa Maria station was delayed due to supply chain, construction, and utility connection delays. The new Santa Maria site (06-083-1009) began operation on October 1, 2022. EPA has already approved the shutdown of the NO₂ and CO monitors at the Santa Maria station; a copy of the letter is included in Appendix B. The new station continues monitoring O₃, PM₁₀, and PM_{2.5} as SLAMS monitors. See Appendix B for more details on the station relocation. Per California Assembly Bill 1647, the District is required to install and operate a refinery-related community air monitoring system downwind of the Santa Maria Asphalt Refinery. The new Santa Maria station will also function as the community air monitoring station and will monitor H₂S, SO₂, and BTEX pollutants. See Appendix E for details on the non-SLAMS monitoring at the new Santa Maria site.

In response to public requests, the District intends to install an additional PM_{2.5} FEM monitor in Carpinteria. The exact location of the monitor is still being finalized. This monitor will operate initially as a Special Purpose Monitor (SPM) monitor to assess the range of PM_{2.5} concentrations and wildfire smoke impacts from this location. The District will work with EPA on the siting of this monitor, and expects the monitor to begin measurements in July 2023.

2.10 Additional Monitors

Santa Barbara County operates or oversees the operation of some monitors that are not required by 40 CFR 58.10. These stations and monitors are included in the network review for reference only and are not used to demonstrate compliance with any requirements even though they are operated under the same quality assurance/control guidelines as the FRM monitors. More details on these non-SLAMS monitors are provided in Appendix E.

All the monitoring stations listed in this report, with the exception of Santa Ynez, also measure wind speed, wind direction, and ambient temperature. These data are used for modeling and tracking purposes, and also help the public to understand the nature and origin of real-time air pollution measurements. Wind and temperature conditions for the Santa Ynez location are measured and reported by the NOAA National Weather Service.

3.0 Additional information on PM_{2.5} monitors

This section includes information for elements required to be in the annual network plan that relate specifically to PM_{2.5}. One required element relates to whether data for a PM_{2.5} monitor can be used to determine compliance with the national annual PM_{2.5} air quality standard. This is termed as the suitability for comparison to the annual standard. The other element requires information regarding the review process followed by air agencies when changes are made to the location of a PM_{2.5} monitor that is violating a PM_{2.5} NAAQS.

3.1 Comparison to Annual PM_{2.5} NAAQS

Only data from a PM_{2.5} FRM or FEM can be used in regulatory determinations of compliance with the annual PM_{2.5} NAAQS, and the monitor must be located at a neighborhood scale. For a PM_{2.5} monitor to be representative at a neighborhood scale, the concentration values measured by the monitor should be representative of concentrations expected over an area with dimensions of a few kilometers. Therefore, the monitor should not be located too close to a hot spot of PM_{2.5} concentrations that extends over distances of less than a few hundred meters. The SLAMS PM_{2.5} FRM and FEM monitors in Santa Barbara County are sited to be representative of a neighborhood scale and meet this suitability requirement.

3.2 Review of Changes to PM_{2.5} network

As required by regulation, prior to any changes to the PM_{2.5} network being made, a formal request is drafted outlining the reason for the change, when the change will occur, and any other relevant information about the proposed changes. The proposal (either as part of an annual network review or between reviews) will be posted on the District website for a 30-day public comment period. Following the comment period, the District will forward the request with comments and District responses to EPA for consideration. Only after EPA has granted approval of the proposed change, will the District make the changes to the PM_{2.5} monitoring network.

4.0 Quality Assurance and Data Submittal

All data collected from the monitors in the Santa Barbara County network are reviewed for quality assurance by the District. All SLAMS monitors meet the requirements of 40 CFR 58.

4.1 Annual Performance Evaluation

Annual performance evaluations on all SLAMS sites are performed by challenging the gas monitors with known concentrations of audit gases to evaluate the accuracy of the SLAMS gas monitors. Bi-annual flow audits are performed to evaluate the performance of SLAMS particulate monitors.

4.2 Data Submittal

Digital records of the data, including precision and accuracy data, are submitted to EPA for all SLAMS monitors by uploading the records to their air quality system (AQS) database. These records are submitted within 90 days following the end of each quarterly reporting period.

4.3 Annual Certification

The SLAMS data are certified for their accuracy and completeness on an annual basis and a certification letter is required to be submitted to the regional EPA administrator by May 1 of each year. The data for calendar year 2022 was certified by letter submitted to the regional EPA administrator on May 1, 2023.

5.0 Detailed Site Information

The tables in this section give detailed information relating to the SLAMS sites and monitors. They are presented to show compliance with the monitoring requirements found in 40 CFR 58.10. Note that some sites included in this section contain both SLAMS and non-SLAMS monitors, with only the SLAMS monitors presented in this section. Details on Non-SLAMS sites and monitors are provided in Appendix E. Please note the following in relation to the detailed site information tables:

1. All glass used for inlet/manifold is borosilicate or equivalent.
2. There are no collocated monitors at the SLAMS or industrial stations in Santa Barbara County, therefore information in detailed station information tables do not include fields relating to collocated monitors.
3. All collocation requirements are being met by CARB, see the CARB Annual Network Plan for details.
4. All sample probes, including low-volume PM samplers, are separated horizontally from other station probes by at least one meter.
5. "Distance to Trees" entries represent the distance from the probe to the tree dripline.

Table 5.1
Carpinteria Monitoring Station Details

Site Name	Carpinteria	
AQS ID	060831021	
GIS coordinates	34.403047-119.45795	
Location	Located in a rural setting NE of the City of Carpinteria	
Address	Gobernador Road, Carpinteria, CA 93013	
County	Santa Barbara County	
Dist. To road	Gobernador Canyon Road, 115 meters	
Traffic count (AADT, year)	Gobernador Canyon Road - 50 est.	
Groundcover	Grass	
Representative area	MSA (Santa Barbara – Santa Maria, CA)	
Pollutant, POC	O₃,1	
Monitor Type	SLAMS ¹	
Network Affiliation	NA	
Parameter Code	44201	
Monitoring Objective	NAAQS	
Site type(s)	Highest conc.	
Mfg/Model	TAPI T400	
Method Code	087	
FRM/FEM or other	FEM	
Collecting Agency	Santa Barbara County ²	
Reporting Agency	Santa Barbara County	
Spatial Scale	Regional	
Start date	1/1/86	
Operation schedule	Continuous	
Sampling season	All Year	
Probe height	4.3 m	
Distance from supporting structure	1.5 m	
Distance from obstructions on roof	None	
Distance from obstructions not on roof/height above probe	8m/3m-tree	
Distance from trees	8m ³	
Distance to furnace or incinerator	None	
Unrestricted airflow	360°	
Probe material	Glass & Teflon	
Residence time	6.6 s	
Will there be changes in next 18 months?	No	
Frequency of one-point QC check (gaseous)	Daily	
Last annual performance evaluation (gaseous)	4/27/22	

¹ Ozone changed from Industrial to SLAMS on February 26, 2019.

² The District took responsibility for the operation of the Carpinteria site from a contractor beginning September 2020

³ The District has scheduled a commercial tree trimmer to trim the tree so that it is below probe height.

Table 5.2
Goleta Monitoring Station Details

Site Name	Goleta		
AQS ID	060832011		
GIS coordinates	34.4455 -119.828333		
Location	In field behind Lutheran Church		
Address	380 N. Fairview Ave., Goleta, CA		
County	Santa Barbara County		
Dist. to road	Berkley Road, 60 meters; Fairview Ave, 193 meters; Alli Way 77 meters		
Traffic count (AADT, year)	Fairview - 12546 (2003); Berkley Rd - 3480 (2003); Ali Way - 25 est.		
Groundcover	Grass		
Representative area	MSA (Santa Barbara – Santa Maria, CA)		
Pollutant, POC	O₃,1	PM₁₀,1	PM_{2.5},1
Monitor Type	SLAMS	SLAMS	SLAMS
Network Affiliation	NA	NA	NA
Parameter Code	44201	81102	88101
Monitoring Objective	NAAQS, Public Info	NAAQS, Public Info	NAAQS, public Info
Site type(s)	Population	Population	Population
MFG/ Model	TAPI T400	BAM 1020	BAM 1020
Method Code	087	122	170
FRM/FEM or other	FEM	FEM	FEM
Collecting Agency	Santa Barbara County	Santa Barbara County	Santa Barbara County
Reporting Agency	Santa Barbara County	Santa Barbara County	Santa Barbara County
Spatial Scale	Urban	Neighborhood	Neighborhood
Start date	1/1/1980	1/1/10	1/1/10
Operation schedule	Continuous	Continuous	Continuous
Sampling season	All Year	All Year	All Year
Probe height	3.5 m	4.6 m	4.7 m
Distance from supporting structure	1 m	2.1 m	2.2 m
Distance from obstructions on roof	None	None	None
Distance from obstructions not on roof/height above probe	20.9m/9.0m - Tree	20.9m/9.0m - Tree	20.9m/9.0m - Tree
Distance from trees	20.9	20.9	20.9
Distance to furnace or incinerator	None	None	None
Unrestricted airflow	360°	360°	360°
For low volume PM instruments, is any PM instrument within 1 m of the lo-vol? If yes, please list distance (meters) and instrument(s).	NA	No	No
Probe material	Teflon	N/A	N/A
Residence time	9.04 s	N/A	N/A

Will there be changes in next 18 months?	No	No	No
Frequency of one-point QC check (gaseous)	Daily	N/A	N/A
Frequency of flow rate verification for automated PM analyzers	N/A	Bi-Weekly	Bi-Weekly
Last annual performance evaluation (gaseous)	4/26/22	N/A	N/a
Last two semi-annual flow rate audits for PM monitors		4/26/22 11/17/21	4/26/22 11/17/21
Is it suitable for comparison against the annual PM _{2.5} ?	N/A	N/A	Yes

Table 5.3
Las Flores Canyon #1 Monitoring Station Details

Site Name	Las Flores Canyon #1	
AQS ID	060831025	
GIS coordinates	34.48975 -120.046917	
Location	North end of canyon behind an oil and gas facility	
Address	Calle Real US Hwy 101, El Capitan, CA	
County	Santa Barbara County	
Dist. to road	HWY 101, 2860 meters	
Traffic count (AADT, year)	Hwy 101 - 30,200 (2013)	
Groundcover	Grass and dirt	
Representative area	MSA (Santa Barbara – Santa Maria, CA)	
Pollutant, POC	O₃,1	
Monitor Type	SLAMS ¹	
Network Affiliation	NA	
Parameter Code	44201	
Monitoring Objective	NAAQS, public	
Site type(s)	Max O ₃ conc.	
MFG/ Model	TAPI T400	
Method Code	087	
FRM/FEM or other	FEM	
Collecting Agency	Santa Barbara County	
Reporting Agency	Santa Barbara County	
Spatial Scale	Regional	
Start date	4/1/88	
Operation schedule	Continuous	
Sampling season	All Year	
Probe height	3.5 m	
Distance from supporting structure	1.1 m	
Distance from obstructions on roof	None	
Distance from obstructions not on roof/height above probe	None	
Distance from trees	None	
Distance to furnace or incinerator	None	
Unrestricted airflow	360°	

For low volume PM instruments, is any PM instrument within 1 m of the lo- vol? If yes, please list distance (meters) and instrument(s).	NA
Probe material	Glass &Teflon
Residence time	10.0 s
Will there be changes in next 18 months?	No
Frequency of flow rate verification for automated PM samplers	N/A
Frequency of one-point QC check (gaseous)	Daily
Last annual performance evaluation (gaseous)	4/21/22
Last two semi-annual flow rate audits for PM monitors	N/A

¹ Ozone changed from Industrial to SLAMS on February 26, 2019.

Table 5.4
Lompoc H Street Monitoring Station Details

Site Name	Lompoc H Street					
AQS ID	060832004					
GIS coordinates	34.637833 -120.4575					
Location	Parking lot behind gas company					
Address	128 S. H Street, Lompoc CA 93436					
County	Santa Barbara County					
Dist. to road	H Street, 28 meters; E. Cyprus, 57 meters; Ocean Ave, 120 meters; Alley, 13 meters					
Traffic count (AADT, year)	Ocean Ave (Hwy 246) - 11200 (2013); H Street 12900 (2010); Cyprus - 500 est.; Alley - 20 est.					
Groundcover	Asphalt					
Representative area	MSA (Santa Barbara – Santa Maria, CA)					
Pollutant, POC	O₃,1	NO₂,1	SO₂,1	CO,1	PM₁₀,2	PM_{2.5},1
Monitor Type	SLAMS	SLAMS	SLAMS	SLAMS	SLAMS	SLAMS
Network Affiliation	NA	NA	NA	NA	NA	NA
Parameter Code	44201	42602	42401	42101	81102	88101
Monitoring Objective	NAAQS, Public	NAAQS, Public	NAAQS, Public	NAAQS, Public	NAAQS, Public	NAAQS, public
Site type(s)	Population	Population	Population	Population	Population	Population
MFG/ Model	TAPI 400e	TEI 42i	TEI 43i	TAPI T300	BAM 1020	BAM 1020
Method Code	087	074	060	093	122	170
FRM/FEM or other	FEM	FRM	FEM	FRM	FEM	FEM
Collecting Agency	Santa Barbara County	Santa Barbara County	Santa Barbara County	Santa Barbara County	Santa Barbara County	Santa Barbara County
Reporting Agency	Santa Barbara County	Santa Barbara County	Santa Barbara County	Santa Barbara County	Santa Barbara County	Santa Barbara County
Spatial Scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Start date	1/1/84	5/1/91	1/1/84	1/1/84	8/1/09	9/1/08
Operation schedule	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous
Sampling season	All Year	All Year	All Year	All Year	All Year	All Year
Probe height	4.4 m	4.4 m	4.4 m	4.4 m	5.3 m	5.4 m
Distance from supporting structure	1.0 m	1.0 m	1.0 m	1.0 m	2.0 m	2.08 m
Distance from obstructions on roof	None	None	None	None	None	None
Distance from obstructions not on roof/height above probe	15.2/4.6m Tree	15.2/4.6m Tree	15.2/4.6m Tree	15.2/4.6m Tree	15.2/3.7m Tree	15.2/3.7m Tree
Distance from trees	15m	15m	15m	15m	15m	15m
Distance to furnace or incinerator	None	None	None	None	None	None
Unrestricted airflow	360°	360°	360°	360°	360°	360°
For low volume PM instruments, is any PM instrument within 1 m of	NA	NA	NA	NA	No	No

the lo-vol? If yes, please list distance (meters) and instrument(s).						
Probe material	Glass & Teflon	Glass & Teflon	Glass & Teflon	Glass & Teflon	N/A	N/A
Residence time	12.2 s	13.6 s	12.9 s	18.4 s	N/A	N/A
Will there be changes in next 18 months?	No	No	No	No	No	No
Frequency of flow rate verification for manual PM samplers	N/A	N/A	N/A	N/A	N/A	N/A
Frequency of flow rate verification for automated PM analyzers	N/A	N/A	N/A	N/A	Bi-Weekly	Bi-Weekly
Frequency of one-point QC check (gaseous)	Daily	Daily	Daily	Daily	N/A	N/A
Last annual performance evaluation (gaseous)	4/20/22	4/20/22	4/20/22	4/20/22	N/A	N/A
Last two semi-annual flow rate audits for PM monitors	N/A	N/A	N/A	N/A	4/20/22 11/8/22	4/20/22 11/8/22
Is it suitable for comparison against the annual PM _{2.5} ?	N/A	N/A	N/A	N/A	N/A	Yes

Table 5.5
Paradise Road Monitoring Station Details

Site Name	Paradise Road
AQS ID	060831014
GIS coordinates	34.54170 -119.79152
Location	Located in Los Padres National Forest off of Paradise Rd
Address	Paradise Road, Los Padres National Forrest CA 93105
County	Santa Barbara County
Dist. to road	Paradise Rd., 100 meters
Traffic count (AADT, year)	Paradise Rd - 100 est.
Groundcover	Trees and brush
Representative area	MSA (Santa Barbara – Santa Maria, CA)
Pollutant, POC	O₃,1
Monitor Type	SLAMS ¹
Network Affiliation	NA
Parameter Code	44201
Monitoring Objective	NAAQS, Public
Site type(s)	Max O ₃ Conc.
MFG/ Model	TAPI T400
Method Code	087
FRM/FEM or other	FEM
Collecting Agency	Consultant
Reporting Agency	Santa Barbara County
Spatial Scale	Regional
Start date	1/1/86
Operation schedule	Continuous
Sampling season	All Year
Probe height	4.6 m
Distance from supporting structure	1.5 m
Distance from obstructions on roof	None
Distance from obstructions not on roof/height above probe	7/2 m Tree ²
Distance from trees	7 m ²
Distance to furnace or incinerator	None
Unrestricted airflow	360°
Probe material	Glass & Teflon
Residence time	19.7 s
Will there be changes in next 18 months?	No
Frequency of one-point QC check (gaseous)	Bi-weekly
Last annual performance evaluation (gaseous)	4/21/22

¹ Ozone changed from Industrial to SLAMS on February 26, 2019.

²The District has been working with U.S. Forest Service (USFS) to obtain permission to trim the tree exceeding siting requirements for over a year and USFS has finally determined the tree cannot be trimmed due to being a protected species. The District then developed a plan to increase probe height above tree as the only alternative to meeting siting requirements as any horizontal relocation of probe will put it within 10m of other trees. Probe relocation scheduled for June 2023.

Table 5.6
Santa Barbara Monitoring Station Details

Site Name	Santa Barbara		
AQS ID	060830011		
GIS coordinates	34.427711 -119.690844		
Location	In parking lot of the National Guard Armory		
Address	700 E. Canon Perdido, Santa Barbara CA 93103		
County	Santa Barbara County		
Dist. to road	De La Guerra, 10 meters; N Quarantina, 85 meters; N. Nopal, 60 meters; E. Canon Perdido, 140 meters; N. Milpas, 200 meters		
Traffic count (AADT, year)	De La Guerra - 4500 (1996); Canon Perdido - 7300 (1996); Quarantina - 100 est.; Milpas - 14600 (1996) N. Nopal – 100 est.		
Groundcover	Asphalt		
Representative area	MSA (Santa Barbara – Santa Maria, CA)		
Pollutant, POC	O₃,1	PM_{2.5},3	PM₁₀,3
Monitor Type	SLAMS	SLAMS	SLAMS
Network Affiliation	NA	NA	NA
Parameter Code	44201	88101	81102
Monitoring Objective	NAAQS, public	NAAQS, public	NAAQS, public
Site type(s)	population	Highest concentration	population
MFG/ Model	TAPI T400	BAM 1020	BAM 1020
Method Code	087	170	122
FRM/FEM or other	FEM	FEM	FEM
Collecting Agency	Santa Barbara County	Santa Barbara County	Santa Barbara County
Reporting Agency	Santa Barbara County	Santa Barbara County	Santa Barbara County
Spatial Scale	Urban	Neighborhood	Neighborhood
Start date	5/1/02	7/1/10	5/1/02
Operation schedule	Continuous	Continuous	Continuous
Sampling season	All Year	All Year	All Year
Probe height	4.6 m	4.5 m	4.5 m
Distance from supporting structure	2.0 m	1.93 m	1.93 m
Distance from obstructions on roof	None	None	None
Distance from obstructions not on roof/height above probe	12.8m/1.3m-tree	11.3m/1.3m-tree	13.1m/1.3m-tree
Distance from trees	12.8m	11.3m	13.1m
Distance to furnace or incinerator	None	None	None
Unrestricted airflow	360°	360°	360°
For low volume PM instruments, is any PM instrument within 1 m of the lo-vol? If yes, please list distance (meters) and instrument(s).	NA	No	No
Probe material	Teflon	N/A	N/A

Residence time	15.8 s	N/A	N/A
Will there be changes in next 18 months?	No	No	No
Frequency of one-point QC check (gaseous)	Daily		
Frequency of flow rate verification for automated PM analyzers		Bi-Weekly	Bi-Weekly
Last annual performance evaluation (gaseous)	4/27/22		
Last two semi-annual flow rate audits for PM monitors		4/27/22 11/8/22	4/27/22 11/8/22
Is it suitable for comparison against the annual PM _{2.5} ?	N/A	Yes	N/A

Note: The District took over responsibility for this site from CARB in January 2020.

Table 5.7
 Santa Maria Monitoring Station Details – Started Operation on October 1, 2022

Site Name	Santa Maria		
AQS ID	060831009		
GIS coordinates	34.890667 -120.4328444		
Location	Lakeview Junior High School		
Address	3700 Orcutt Rd, Santa Maria 93455		
County	Santa Barbara County		
Dist. to road	Harsin Ln – 61m, Orcutt Rd – 297m		
Traffic count (AADT, year)	Harsin Rd - <200 veh/day (staff estimate), Orcutt Rd – 2433 veh/day (2023)		
Groundcover	Parking lot paving		
Representative area	MSA (Santa Barbara – Santa Maria, CA)		
Pollutant, POC	O₃, 1	PM₁₀, 1	PM_{2.5}, 1
Monitor Type	SLAMS	SLAMS	SLAMS
Network Affiliation	NA	NA	NA
Parameter Code	44201	81102	88101
Monitoring Objective	NAAQS, public	NAAQS, public	NAAQS, public
Site type(s)	Population	Population	Population
MFG/ Model	TAPI T400	BAM 1020	BAM 1020
Method Code	087	122	170
FRM/FEM or other	FEM	FEM	FEM
Collecting Agency	Santa Barbara County	Santa Barbara County	Santa Barbara County
Reporting Agency	Santa Barbara County	Santa Barbara County	Santa Barbara County
Spatial Scale	Urban	Neighborhood	Neighborhood
Start date	5/1/99	7/1/09	7/1/10
Operation schedule	Continuous	Continuous	Continuous
Sampling season	All Year	All Year	All Year
Probe height	4.1 m	4.5 m	4.6 m
Distance from supporting structure	1.5 m	2.0 m	2.08 m
Distance from obstructions on roof	None	None	None
Distance from obstructions not on roof/height above probe	61m/12m-tree	61m/12m-tree	61m/12m-tree
Distance from trees	61m	61m	61m
Distance to furnace or incinerator	None	None	None
Unrestricted airflow	360°	360°	360°
For low volume PM instruments, is any PM instrument within 1 m of the lo-vol? If yes, please	NA	No	No

list distance (meters) and instrument(s).			
Probe material	Teflon	N/A	N/A
Residence time	5.4 s	N/A	N/A
Will there be changes in next 18 months?	No	No	No
Frequency of one-point QC check (gaseous)	daily		
Frequency of flow rate verification for automated PM analyzers		Bi-Weekly	Bi-Weekly
Last annual performance evaluation (gaseous)	11/7/22		
Last two semi-annual flow rate audits for PM monitors		11/7/22	11/7/22
Is it suitable for comparison against the annual PM _{2.5} ?	N/A	N/A	Yes

Note: Site began operation on October 1, 2022

Table 5.8
Santa Ynez Monitoring Station Details

Site Name	Santa Ynez	
AQS ID	060833001	
GIS coordinates	34.605819 -120.075069	
Location	South side of Santa Ynez airport runway	
Address	900 Airport Rd., Santa Ynez, CA	
County	Santa Barbara County	
Dist. to road	HWY 246, 539 meters	
Traffic count (AADT, year)	Hwy 246 - 8050 (2013)	
Groundcover	Grass/Dirt	
Representative area	MSA (Santa Barbara – Santa Maria, CA)	
Pollutant, POC	O₃,1	
Monitor Type	SLAMS	
Network Affiliation	NA	
Parameter Code	44201	
Monitoring Objective	NAQQS, public	
Site type(s)	Population	
MFG/ Model	TAPI T400	
Method Code	087	
FRM/FEM or other	FEM	
Collecting Agency	Santa Barbara County	
Reporting Agency	Santa Barbara County	
Spatial Scale	Urban	
Start date	7/1/2013	
Operation schedule	Continuous	
Sampling season	All Year	
Probe height	3.5 m	
Distance from supporting structure	1.0 m	
Distance from obstructions on roof	None	
Distance from obstructions not on roof/height above probe	None	
Distance from trees	None	
Distance to furnace or incinerator	None	
Unrestricted airflow	360°	
Probe material	Teflon	
Residence time	9.46 s	
Will there be changes in next 18 months?	No	
Frequency of one-point QC check (gaseous)	Daily	
Last annual performance evaluation (gaseous)	4/26/22	

Glossary of Acronyms

AQS	Air quality system
ARB	Air Resources Board
ARM	Approved regional method
CARB	California Air Resources Board
CFR	Code of Federal Regulations
CO	Carbon monoxide
FEM	Federal equivalent method
FRM	Federal reference method
H ₂ S	Hydrogen Sulfide
MSA	Metropolitan statistical area
NAAQS	National ambient air quality standard
NO ₂	Nitrogen dioxide
O ₃	Ozone
PM ₁₀	Particulate matter less than 10 microns in diameter
PM _{2.5}	Particulate matter less than 2.5 microns in diameter
PSD	Prevention of significant deterioration
SBCAPCD	Santa Barbara County Air Pollution Control District
SLAMS	State and Local Air Monitoring Station
SO ₂	Sulfur dioxide
SPM	Special Purpose monitor
THC	Total hydrocarbons
TRS	Total reduced sulfur
US EPA	United States Environmental Protection Agency

APPENDIX A

Regulatory language of 40 CFR 58.10

§ 58.10 Annual monitoring network plan and periodic network assessment.

(a)(1) Beginning July 1, 2007, the State, or where applicable local, agency shall adopt and submit to the Regional Administrator an annual monitoring network plan which shall provide for the establishment and maintenance of an air quality surveillance system that consists of a network of SLAMS monitoring stations including FRM, FEM, and ARM monitors that are part of SLAMS, NCore stations, STN stations, State speciation stations, SPM stations, and/or, in serious, severe and extreme O₃ nonattainment areas, PAMS stations, and SPM monitoring stations. The plan shall include a statement of purposes for each monitor and evidence that siting and operation of each monitor meets the requirements of appendices A, C, D, and E of this part, where applicable. The annual monitoring network plan must be made available for public inspection for at least 30 days prior to submission to EPA.

(2) Any annual monitoring network plan that proposes SLAMS network modifications including new monitoring sites is subject to the approval of the EPA Regional Administrator, who shall provide opportunity for public comment and shall approve or disapprove the plan and schedule within 120 days. If the State or local agency has already provided a public comment opportunity on its plan and has made no changes subsequent to that comment opportunity, the Regional Administrator is not required to provide a separate opportunity for comment.

(3) The plan for establishing required NCore multi-pollutant stations shall be submitted to the Administrator not later than July 1, 2009. The plan shall provide for all required stations to be operational by January 1, 2011.

(b) The annual monitoring network plan must contain the following information for each existing and proposed site:

(1) The AQS site identification number.

(2) The location, including street address and geographical coordinates.

(3) The sampling and analysis method(s) for each measured parameter.

(4) The operating schedules for each monitor.

(5) Any proposals to remove or move a monitoring station within a period of 18 months following plan submittal.

(6) The monitoring objective and spatial scale of representativeness for each monitor as defined in appendix D to this part.

(7) The identification of any sites that are suitable and sites that are not suitable for comparison against the annual PM_{2.5} NAAQS as described in §58.30.

(8) The MSA, CBSA, CSA or other area represented by the monitor.

(c) The annual monitoring network plan must document how States and local agencies provide for the review of changes to a PM_{2.5} monitoring network that impact the location of a violating PM_{2.5} monitor or the creation/change to a community monitoring zone, including a description of the proposed use of spatial averaging for purposes of making comparisons to the annual PM_{2.5} NAAQS as set forth in appendix N to part 50 of this chapter. The affected State or local agency must document the process for obtaining public comment and include any comments received through the public notification process within their submitted plan.

(d) The State, or where applicable local, agency shall perform and submit to the EPA Regional Administrator an assessment of the air quality surveillance system every 5 years to determine, at a minimum, if the network meets the monitoring objectives defined in appendix D to this part, whether new sites are needed, whether existing sites are no longer needed and can be terminated, and whether new technologies are appropriate for incorporation into the ambient air monitoring network. The network assessment must consider the ability of existing and proposed sites to support air quality characterization for areas with relatively high populations of susceptible individuals (e.g., children with asthma), and, for any sites that are being proposed for discontinuance, the effect on data users other than the agency itself, such as nearby States and Tribes or health effects studies. For PM_{2.5}, the assessment also must identify needed changes to population-oriented sites. The State, or where applicable local, agency must submit a copy of this 5-year assessment, along with a revised annual network plan, to the Regional Administrator. The first assessment is due July 1, 2010.

(e) All proposed additions and discontinuations of SLAMS monitors in annual monitoring network plans and periodic network assessments are subject to approval according to §58.1

APPENDIX B
DISCONTINUATION OF SANTA MARIA SLAMS STATION ON BROADWAY
ESTABLISH NEW SANTA MARIA - Lakeview SLAMS STATION



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

March 29, 2021

Kathleen Gill
Chief, Air Quality Surveillance Branch
Monitoring and Laboratory Division
California Air Resources Board
1927 13th Street
Sacramento, California 95811

Dear Chief Gill:

This letter provides the U.S. Environmental Protection Agency's (EPA) review and approval for the California Air Resources Board's (CARB) discontinuation of the O₃, CO, NO₂, PM_{2.5}, and PM₁₀ State/Local Air Monitoring Station (SLAMS) monitors at the Santa Maria – South Broadway site (Air Quality System (AQS) Site ID: 06-083-1008). A request for EPA approval of this network change was submitted to EPA on December 30, 2020. Per 40 CFR 58.14, monitoring agencies are required to obtain EPA approval for the discontinuation of SLAMS monitors.

Discontinuation of the O₃, CO, NO₂, and PM_{2.5} SLAMS monitors were reviewed by EPA against criteria contained in 40 CFR 58.14(c)(1), based on certified data submitted to EPA's AQS. The Santa Maria O₃ monitor was in attainment of the 2008 and 2015 8-hour O₃ National Ambient Air Quality Standards (NAAQS) for design value years 2015-2019. The EPA has determined that, based on design values from 2015-2019, there is less than a 10 percent probability of exceeding 80 percent of the NAAQS during the next three years at this site. During 2015-2019, the 4th maximum daily 8-hour O₃ concentrations were generally at least 10 parts per billion (ppb) below the 2015 NAAQS. Preliminary 2020 data are consistent with the historical trend and continue to show low concentrations. This O₃ SLAMS monitor is not specifically required by an attainment or maintenance plan and is not the maximum O₃ concentration site in the Santa Barbara-Santa Maria Metropolitan Statistical Area (MSA). The Santa Barbara County Air Pollution Control District (SBCAPCD) currently operates seven other O₃ SLAMS monitors in the Santa Barbara-Santa Maria MSA. Furthermore, discontinuance of this monitor does not compromise data collection needed for implementation of the NAAQS and will not prevent SBCAPCD from meeting 40 CFR 58 Appendix D requirements. As elaborated upon below, SBCAPCD plans to establish O₃ SLAMS monitoring at a new site in the MSA.

The Santa Maria CO monitor was in attainment of the 1971 1-hour CO and 8-hour CO NAAQS for design value years 2015-2019. The EPA has determined that, based on design values from 2015-2019, there is less than a 10 percent probability of exceeding 80 percent of the NAAQS during the next three years at this site. Preliminary 2020 data are consistent with the historical trend and continue to show low

concentrations. This CO monitor is not specifically required by an attainment or maintenance plan, and SBCAPCD currently operates another CO SLAMS monitor in the Santa Barbara-Santa Maria MSA. Furthermore, discontinuance of this monitor does not compromise data collection needed for implementation of the NAAQS and will not prevent SBCAPCD from meeting 40 CFR 58 Appendix D requirements.

The Santa Maria NO₂ monitor was in attainment of the 1971 annual and 2010 1-hour NO₂ NAAQS for design value years 2015-2019. The EPA has determined that, based on design values from 2015-2019, there is less than a 10 percent probability of exceeding 80 percent of the NAAQS during the next three years at this site. Preliminary 2020 data are consistent with the historical trend and continue to show low concentrations. This NO₂ monitor is not specifically required by an attainment or maintenance plan, and SBCAPCD currently operates another NO₂ SLAMS monitor in the Santa Barbara-Santa Maria MSA. Furthermore, discontinuance of this monitor does not compromise data collection needed for implementation of the NAAQS and will not prevent SBCAPCD from meeting 40 CFR 58 Appendix D requirements.

The PM_{2.5} monitor was in attainment of the 2012 annual and 2006 24-hour PM_{2.5} NAAQS for design value years 2015-2019. The EPA has determined that, based on design values from 2015-2019, there is less than a 10 percent probability of exceeding 80 percent of the NAAQS during the next three years at this site. Preliminary 2020 data are consistent with the historical trend and continue to show low concentrations. As demonstrated in CARB's letter and supporting documentation, the Santa Maria site is not and is unlikely to become the maximum PM_{2.5} concentration site for the County, and all annual PM_{2.5} averages, annual PM_{2.5} 98th percentile values, and PM_{2.5} design values for the site between 2015 and 2019 are below the corresponding NAAQS. Furthermore, discontinuance of this monitor does not compromise data collection needed for implementation of the NAAQS and will not prevent SBCAPCD from meeting 40 CFR 58 Appendix D requirements. SBCAPCD currently operates three other PM_{2.5} SLAMS monitors in the Santa Barbara-Santa Maria MSA. As elaborated upon below, SBCAPCD plans to establish PM_{2.5} SLAMS monitoring at a new site in the MSA.

Discontinuation of the PM₁₀ SLAMS monitor was reviewed by EPA against criteria contained in 40 CFR 58.14(c), which states that requests for discontinuation "may also be approved on a case-by-case basis if discontinuance does not compromise data collection needed for implementation of a NAAQS and if the requirements of appendix D to this part, if any, continue to be met." The Santa Maria PM₁₀ monitor was in attainment of the 1987 24-hour PM₁₀ NAAQS for the 2016 design value; 2015 and 2017-2019 design values were invalid due to incomplete data. The PM₁₀ monitor began reporting data in standard conditions on June 1, 2013; the 2013 data were therefore not comparable to the NAAQS prior to this date, resulting in an invalid 2015 design value. More recently, the PM₁₀ monitor had 58% data completeness in the second quarter of 2017 due to instrumentation issues that resulted in invalid 2017-2019 design values. Preliminary 2020 data are consistent with the historical trend and continue to show low concentrations. As demonstrated in CARB's letter and supporting documentation, no 24-hr PM₁₀ exceedances were recorded in the last five years at the PM₁₀ monitor. Furthermore, discontinuance of this monitor does not compromise data collection needed for implementation of the PM₁₀ NAAQS and will not prevent SBCAPCD from meeting 40 CFR 58 Appendix D requirements. SBCAPCD currently operates three other PM₁₀ SLAMS monitors in the Santa Barbara-Santa Maria MSA. As elaborated upon below, SBCAPCD plans to establish PM₁₀ SLAMS monitoring at a new site in the MSA.

Based on these analyses, EPA approves CARB's discontinuation of the Santa Maria O₃, CO, NO₂, PM_{2.5}, and PM₁₀ SLAMS monitors. Please include this letter and the relevant monitor and site information in the next CARB and SBCAPCD annual monitoring network plans.

EPA further notes that, as stated in SBCAPCD's 2020 Annual Network Plan, SBCAPCD intends to establish O₃, PM_{2.5}, and PM₁₀ SLAMS monitors at a new site within the Santa Barbara-Santa Maria MSA in 2021. The site location has not yet been determined, but SBCAPCD intends to establish a site with similar monitoring objectives and spatial scales as the current Santa Maria site location. Per 40 CFR 58.14, monitoring agencies are required to obtain EPA approval for the establishment of new SLAMS monitors. EPA recommends that SBCAPCD work with the EPA on this request and to ensure that the new monitors meet all relevant requirements.

If you have any questions, please feel free to contact me at (415) 947-4134 or Dena Vallano of my staff at (415) 972-3134.

Sincerely,

Yoshimura, Gwen Digitally signed by Yoshimura, Gwen
Date: 2021.03.29 12:57:27 -0700'

Gwen Yoshimura
Manager, Air Quality Analysis Office

cc (via email): Manisha Singh, CARB
Greg Gilani, CARB
Kathleen Gill, CARB
Sylvia Vanderspek, CARB
Adolfo Garcia, CARB
Laura Carr, CARB
Ravi Ramalingam, CARB
Craig Anderson, CARB
Reggie Smith, CARB
Thomas Lovejoy, CARB
Andrea McStocker, CARB
Joel Cordes, SBCAPCD



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

June 16, 2022

Molly Pearson
Planning Division Manager
Santa Barbara County Air Pollution Control District
260 North San Antonio Road, Suite A
Santa Barbara, California 93110

Dear Manager Pearson:

This letter provides the U.S. Environmental Protection Agency's (EPA) review and approval for the Santa Barbara County Air Pollution Control District's (SBCAPCD) new State/Local Air Monitoring Station (SLAMS) monitors at the new Santa Maria Lakeview site (Air Quality System (AQS) Site ID: 06-083-1009). A request for EPA approval of this network change was submitted to EPA on March 1, 2022. Per 40 CFR 58.14, monitoring agencies are required to obtain EPA approval for modification to their monitoring network. SLAMS monitors must meet all applicable 40 CFR 58 requirements, including the quality assurance requirements, network design criteria, and siting requirements specified in appendices A, C, D, and E. EPA reviewed SBCAPCD's request and concluded that the applicable criteria contained in 40 CFR 58 are met; EPA therefore approves the new O₃, PM_{2.5}, and PM₁₀ SLAMS monitors at the Santa Maria Lakeview site. Please include this letter and the relevant monitor and site information in the next SBCAPCD annual monitoring network plan.

If you have any questions, please feel free to contact me at (415) 947-4134 or Sheila Tsai of my staff at (415) 972-3328.

Sincerely,

Yoshimura, Gwen Digitally signed by Yoshimura,
Gwen
Date: 2022.06.16 07:50:04 -0700

Gwen Yoshimura
Manager, Air Quality Analysis Office

cc (via email): Manisha Singh, California Air Resources Board (CARB)
Andrea McStocker, CARB
Melissa Niederreiter, CARB
Kathleen Gill, CARB
Adolfo Garcia, CARB
Sylvia Vanderspek, CARB
Jin Xu, CARB

APPENDIX C
Public Noticing

APPENDIX D
Public Comments

APPENDIX E

Non-SLAMS Monitoring in Santa Barbara County

E.1 Introduction

Santa Barbara County Air Pollution Control District has established monitoring networks in Santa Barbara County in addition to the required SLAMS monitoring network. These monitoring efforts provide additional data resources available to District staff, researchers, and the public. Currently, the District has established three additional monitoring networks; Industrial, special study, and low-cost sensor networks.

The Industrial monitors in Santa Barbara County consist of several stations operated by the District or private contractors. There are several major oil and gas developments in Santa Barbara County with permits for the production, processing and transportation of oil and gas. The Industrial stations are designed to measure regional air quality in addition to criteria pollutants from these oil and gas facilities; the “other” stations are designed to measure odorous compounds from these facilities. Operating permits for the oil and gas facilities require the Industrial and “other” monitors to be operated for the life of the permitted facility. These Industrial and “other” monitors are not utilized for comparison to national ambient air quality standards (NAAQS), are not counted in assessing minimum SLAMS monitoring requirements, and are considered secondary monitors by EPA. All Industrial monitors measuring criteria pollutants are required to be EPA approved monitors and are operated to meet the same quality control requirements as the SLAMS monitors.

The special study monitors are all operated by the District and typically are not utilized for permanent long term monitoring; Rather they are used as part of a special study to better understand a specific situation.

With the recent advent of low-cost sensors designed to measure various types of air pollution, the District has established a network of approximately 46 low-cost PM sensors. These sensors do not meet EPA regulatory requirements and have significant accuracy limitations, but can provide important additional air quality data for some specific situations.

E.2 Industrial Monitoring Network

Santa Barbara County Air Pollution Control District expanded their monitoring network in the early 1980s due to unprecedented plans for oil and gas development in Santa Barbara County. New oil and gas processing facilities were permitted in the 1980s with the new facilities’ permits to operate requiring ambient monitoring downwind from the facilities. Additionally, some of the larger new facilities’ permits to operate also required ambient monitoring across the region in order to assess the cumulative impact of these new sources. The monitoring required by these permits require the facilities to continue operation of the monitoring station (and comply with District Monitoring Protocol) for the life of the facility.

In 2017, EPA, CARB, and the District discussed various options for changing the District’s monitoring network to streamline District/CARB/EPA resources, while still providing appropriate monitoring to the community. District staff reviewed initial proposals from CARB with the goal of

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Non-SLAMS Monitoring in Santa Barbara County

identifying sites/monitors that could be discontinued due to either a historical data set showing extremely low concentrations and/or nearby monitors that provide representative data as well as identifying any areas where additional monitoring might be appropriate. Additionally, staff considered industrial monitors that were in place only to serve District data needs and regulations, that could be designated as non-NAAQS compliant (often referred to as “non-regulatory”).

In February 2019, the District, EPA, and CARB reached agreement on modifications to the District’s monitoring network that would streamline EPA/CARB resources, while still meeting the monitoring data needs of the District. The agreed upon changes were to categorize the ozone monitors at the Las Flores Canyon #1, Carpinteria, and Paradise Rd. industrial sites as SLAMS monitors, while categorizing all other required industrial monitors as non-NAAQS compliant, with the District taking full oversight responsibility. The three industrial ozone monitors categorized as SLAMS were due to those sites historically recording the highest ozone concentrations in the County. The remaining industrial monitors were also evaluated by District staff and determined that some of the industrial monitors were no longer needed and could be eliminated. Some of the permit holders that are required to operate industrial monitors contract with the District for operation, while other permit holders choose to contract with air monitoring contractors for their industrial monitoring operations.

Pursuant to District Rule 364, adopted by the District’s Board on May 21, 2020, the District initiated efforts to install and maintain a refinery-related community air monitoring system downwind from the Santa Maria Asphalt Refinery. This monitoring system is collocated with the Santa Maria SLAMS station, and monitors for the following pollutants:

- H2S
- SO2
- Benzene
- Toluene
- Ethylbenzene
- Xylene

The Santa Maria monitoring station relocation delayed operation of these community monitors until early 2023. Data from these monitors is currently available by request and real-time data will be available on the District’s website in the future.

The District’s industrial monitoring network remained the same in 2022 and in 2023 the Santa Maria Asphalt Refinery community monitoring monitors became operational, as presented in Figure E-1 and Table E-1.

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Non-SLAMS Monitoring in Santa Barbara County

Figure E-1
Map of the Industrial Air Monitoring Network in Santa Barbara County

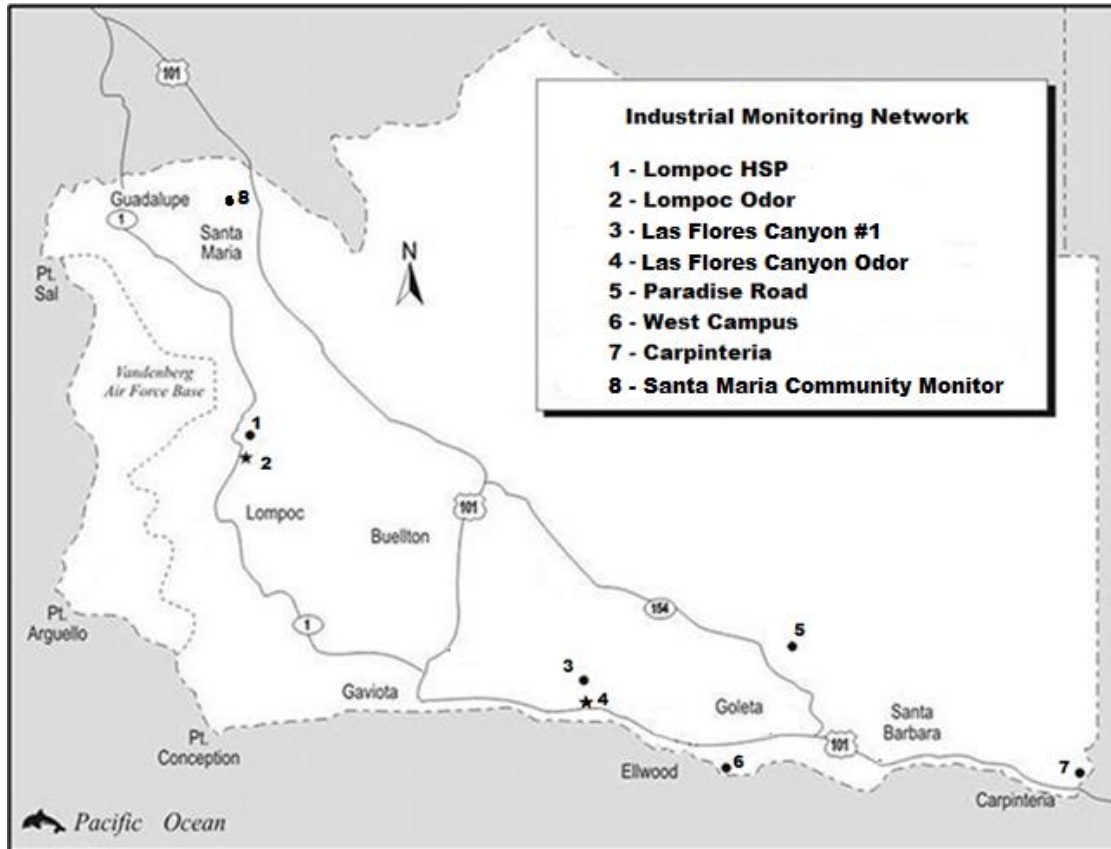


Table E-1
Industrial Monitoring Network in Santa Barbara County

No	Site Name	Type	Operator
1	Lompoc HSP	Industrial	Contractor
2	Lompoc Odor	Industrial/other	Contractor
3	Las Flores Canyon #1	Industrial ¹	District
4	Las Flores Canyon Odor	Industrial/other	District
5	Paradise Road	Industrial ¹	Contractor
6	West Campus	Industrial/other	Contractor
7	Carpinteria	Industrial ¹	District
8	Santa Maria Asphalt Refinery Community Monitoring	Industrial ²	District

¹Ozone at these sites are SLAMS monitors, all other monitors are Industrial.

²Ozone, PM10, PM2.5 at this site are SLAMS monitors, all other monitors are Industrial/Community.

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Non-SLAMS Monitoring in Santa Barbara County

Table E-2
Industrial Monitoring Network Pollutants Measured

Parameter	O ₃	NO ₂	SO ₂	THC	CO	H ₂ S	TRS	PM ₁₀	BTEX ¹
Lompoc HSP	X	X	X	X					
Lompoc Odor						X	X		
Las Flores Canyon #1		X	X	X	X			X	
Las Flores Canyon Odor						X			
Paradise Road		X							
West Campus			X	X		X	X		
Carpinteria		X							
Santa Maria Asphalt Refinery Community Monitoring			X			X			X

¹ BTEX is Benzene, Toluene, Ethylbenzene, and Xylene

Industrial monitors are operated with the same quality control as District operated SLAMS monitors. Data and documentation from industrial sites operated by contractors are reviewed by the District to ensure compliance with quality control and best practice requirements. Typically, all data from Industrial sites are submitted to EPA's AQS system to allow researchers and public access to this data.

The West Campus monitoring site is planned to be shut down in 2023, as a result of the facilities' impending permanent shutdown and decommissioning. The LFC Odor monitoring site was temporarily shut down in July 2018 due to the associated oil and gas processing plant being shut down and will be restarted once production at the facility resumes.

E.3 Special Study Monitoring

The District deploys various monitoring equipment on an as needed basis to better understand specific air pollution issues. Typically these special study monitors are of short duration intended to gather data for a very specific purpose. Wildfire impacts, odor complaints, upset conditions at an oil or gas processing facility, or exploring pollutant levels in a specific area are the typical reasons for these special study monitors. All data from these studies are available to the public through a data request to the District.

Special study particulate monitoring has been performed at the Santa Ynez SLAMS site location since 2020. For the first year, this monitoring project measured PM10 concentrations to assess the PM10 concentration patterns in this area of the county. After review of the PM10 data, it was

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Non-SLAMS Monitoring in Santa Barbara County

determined that there was little value measuring PM10 at this location as the concentrations were low and did not come close to exceeding NAAQS standards. Since this initial period, the monitor was converted to measuring PM2.5. While the typical PM2.5 concentrations are quite low, the monitor has proved useful to provide the public with health impacts in the area during wildfires. The District plans to continue to operate this monitor to provide wildfire impact information to the public.

The District plans on installing a special purpose PM2.5 monitor in Carpinteria in 2023. This monitoring project will provide information on the normal patterns of PM2.5 concentrations as well as wildfire smoke impacts in the City of Carpinteria and surrounding communities.

The District also deploys portable particulate (typically configured to measure PM2.5) monitors to areas impacted by wildfire smoke impacts to provide data to District staff to better communicate health dangers to the public in areas impacted by wildfire smoke.

Additionally, the District has an AirPointer, which is a mobile trailer equipped with various monitors that can be deployed to assess health impacts during various air pollution events such as odor complaints, oil and gas facility upset conditions, wildfire smoke, or any other event where this data would be helpful. The mobile trailer is equipped with the following monitors:

- Benzene
- Ethylbenzene
- Toluene
- Xylene
- H₂S
- Ozone
- PM10
- PM2.5
- Meteorological parameters

E.4 Hydrogen Sulfide Monitoring

For permitted facility site-specific air quality concerns, air monitoring objectives are evaluated and identified through the District's New Source Review permitting process and are included as conditions in those facilities' operating permits. These types of monitors are included in the Annual Air Monitoring Network Plan for informational purposes only. The Ellwood Onshore Facility in Goleta is an example of a permit that includes conditions for measuring hydrogen sulfide (H₂S). At the facility, H₂S is measured by in-plant and fence-line monitors and the data is automatically transmitted to the District. When the Ellwood Onshore Facility monitors detect H₂S, an alarm is triggered, and the District and the City of Goleta are notified. While this data is important during facility operations, it has also provided assistance to measure H₂S from other operations, such as neighboring agricultural wells that contain H₂S.

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Non-SLAMS Monitoring in Santa Barbara County

In response to complaints or site-specific impacts that are not captured by the SLAMS network, the District's AirPointer can be used throughout the county to measure H₂S and other pollutant emissions on a temporary basis. When deployed, the AirPointer provides continuous air quality data that can be viewed in real time. Historically, the District has received H₂S complaints for western Goleta at different times during the year; however, the majority of complaints are received in the fall. In response, the District has proactively deployed the AirPointer in western Goleta during the last couple of fall seasons to measure H₂S. Additional information regarding H₂S in the Goleta area is available on the District's website: www.ourair.org/hydrogen-sulfide-in-goleta-area/.

E.5 Low-Cost Sensors

The air pollution community has begun exploring the use of low-cost sensors for the past decade and has found some benefits as well as gaining a better understanding of the sensors' limitations. With the cost of low-cost sensors being a fraction of traditional air pollution monitors, monitoring in many more locations can be accomplished. However, research has shown significant accuracy issues and other limitations from these sensors. Care must be taken to understand the limitations and accuracy issues to avoid misleading data from these sensors.

The District has deployed 46 PurpleAir PM sensors across Santa Barbara County. These sensors have been shown to produce poor quality data for the larger particles (PM₁₀), but better quality for smaller particles (PM_{2.5}). Specifically, the PurpleAir sensors have been successfully used to assess wildfire smoke impacts. The District's PurpleAir sensor network is used by District staff to better communicate health impacts to communities impacted with wildfire smoke.