2015 Ambient Air Monitoring Network Plan

SLO COUNTY apcd | Air Pollution Control District San Luis Obispo County

Planning, Monitoring and Outreach Division

July 2015 Final Draft

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Introduction

Every year the San Luis Obispo County Air Pollution Control District (SLOCAPCD) submits an ambient air monitoring network plan (ANP) to the United States Environmental Protection Agency (EPA); this document comprises the ANP for 2015. It is intended to fulfill federal requirements laid out in 40 CFR 58.10 and to provide additional information about local monitoring activities to the public. Consistent with these goals and requirements, this ANP will be made available for public review for at least 30 days prior to its submission the EPA. All comments received and any SLOCAPCD responses to those comments will be submitted to EPA along with the ANP.

The ANP is a snapshot of the air monitoring network as it currently exists and documents any changes since the last ANP (published May 2014) and any anticipated changes to the network over the next 18 months. This review and planning process helps ensure continued consistency with federal requirements and monitoring objectives. It also confirms and updates information in state and federal monitoring records. Information is provided for all ambient air pollution monitoring which occurred in the County, including sites operated by the California Air Resources Board (ARB). Data for ARB sites were obtained from that agency and are accurate to the best of our knowledge.

As detailed in subsequent sections, the SLOCAPCD monitoring network remains unchanged since the last ANP with one exception: the relocation of the Atascadero station. Established at Atascadero Fire Station #1 in1988, it was moved in early 2015 to accommodate extensive renovations and new construction planned for the fire department property. The new location is less than a quarter of mile to the north of the original site, and all monitors were retained. A limited period of parallel monitoring of ozone and $PM_{2.5}$ showed close agreement between the old and new locations.

In 2015 we anticipate that two new source-oriented monitoring stations will commence operation. First, the SLOCAPCD has required the operator of the Price Canyon Oilfield to begin ambient monitoring for hydrogen sulfide at its oilfield, which is located between the cities of Pismo Beach and San Luis Obispo. Second, through local Rule 1001, we have required the California Department of Parks and Recreation to establish a PM_{10} monitor downwind of undisturbed, natural sand dunes within the Oceano Dunes State Vehicular Recreation Area (ODSVRA), a California State Park. The purpose of this monitor is to measure baseline, natural emissions. These measurements will be compared to PM_{10} levels measured at the CDF monitoring station, which is located downwind of the part of the ODSVRA where off-highway vehicle activity occurs. Both of these new sites will be operated by the permit holders (or their contractors), and SLOCAPCD will have real-time access to the data that is generated.

General Information on Air Monitoring Networks

Most ambient air quality monitoring stations that are operated by air quality agencies are classified as State and Local Air Monitoring Station (SLAMS). SLAMS are long-term monitoring stations, and are generally considered to be permanent sites. Their primary objective is to collect data for comparison to the National Ambient Air Quality Standards (NAAQS). Stations may instead be classified as Special Purpose Monitors (SPM) or Prevention of Significant Deterioration (PSD) stations—these are generally short-term sites with objectives other than NAAQS comparison.

Appendix D of 40 CFR 58 specifies design criteria for SLAMS networks and states that networks must be designed to meet a minimum of three basic monitoring objectives: 1. Provide air pollution data to the public in a timely manner; 2. Support compliance with the NAAQS; and 3. Support air pollution research. A variety of site types are needed to support these basic objectives, including the six general types identified in the Appendix:

- **Highest Concentration**: Sites located to determine the highest concentration expected to occur in the area covered by the network;
- **Population Exposure**: Those located to determine representative concentrations in areas of high population density;
- **Source Oriented**: Sites located to determine the impact on ambient pollution levels of significant sources or source categories;
- **General/Background**: Those located to determine general background concentration levels;
- **Regional Transport**: Sites located to determine the extent of regional pollutant transport among populated areas, and in support of secondary standards; and
- **Welfare Related Impacts**: Sites located to determine the welfare-related impacts in more rural and remote areas (such as visibility impairment and effects on vegetation).

The physical siting of an air monitoring station must conform to the requirements of the Appendix, and its location must achieve a spatial scale of representativeness that is consistent with the monitoring objective and site type. The spatial scale results from the physical location of the site with respect to the pollutant sources and categories. It estimates the size of the area surrounding the monitoring site that experiences uniform pollutant concentrations. The categories of spatial scale defined in the Appendix 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 110 meters to 0.5 kilometer;
- **Neighborhood Scale**: an area with dimensions in the 0.5 to 4 kilometer range;
- **Urban Scale**: Citywide pollutant conditions with dimensions from 4 to 50 kilometers;
- **Regional Scale**: An entire rural area of the same general geography (this area ranges from tens to hundreds of kilometers); and
- **National and Global Scales**.

The relationship between site type and spatial scale is summarized in Table 1, below, which is adapted from Table D-1 of the Appendix.

Table 1: Relationship between Site Type and Spatial Scale

Site Type	Appropriate Spatial Scale
Highest Concentration	Micro, middle, neighborhood, (sometimes urban or regional for secondary pollutants)
Population Exposure	Neighborhood, urban
Source Oriented	Micro, middle, neighborhood
General/Background	Neighborhood, urban, regional
Regional Transport	Urban, regional
Welfare Related Impacts	Urban, regional

SLAMS Air Monitoring in San Luis Obispo County

San Luis Obispo County comprises the San Luis Obispo-Paso Robles Metropolitan Statistical Area (MSA). Air monitoring responsibilities for the MSA are divided between SLOCAPCD and ARB, as allowed by section 2(e) of Appendix D to 40 CFR 58. SLOCAPCD acknowledges this joint responsibility and is also a member of the ARB Primary Quality Assurance Organization (PQAO). The roles and responsibilities of the two agencies with regard to fulfilling State and Federal monitoring requirements are formalized in a "Roles and Responsibilities" document, which can be viewed on the ARB website.[1]

There are currently ten permanent ambient air monitoring stations (SLAMS) in the County/MSA; their locations are shown in Figure 1. Eight of these stations are operated by the SLOCAPCD as part of our network. ARB operates two additional stations in the county as part of their network, one in Paso Robles and the other in San Luis Obispo. Table 2 lists these stations, the pollutant and meteorological parameters that are monitored at each location and the site type.

Table 2: Summary of Ambient Air Quality Parameters Monitored at SLAMS in San Luis Obispo County

Site	Ozone[b]	Nitrogen Dioxide	Sulfur Dioxide	PM_{10}	$PM_{2.5}$	Wind[c]	Temp
Atascadero	P, C	P, C		P	P	X	X
Carrizo Plains	T, B					X	X
CDF				S, C	S, C	X	
Grover Beach						X	
Mesa2			S, C	S	S	X	X
Morro Bay	B	B				X	
Nipomo Regional Park (NRP)	B	B		B		X	X
Paso Robles [a]	P			P		X	X
San Luis Obispo [a]	P			P	P	X	X
Red Hills	T, C					X	X

Site Types: B = General/Background, C = Highest Concentration, P = Population Exposure, T = Regional Transport, X = Parameter measured at this site, S = Source.
Notes: [a] Paso Robles and San Luis Obispo are operated by ARB; all other sites are operated by SLOCAPCD. [b] Atascadero is the highest concentration site for the western county attainment area, while Red Hills is the highest concentration site for the eastern county non-attainment area. [c] Wind speed, wind direction, and sigma theta.

[1] Air Resources Board, "Quality Management Documents, Document Repository, Finalized Roles and Responsibilities," http://arb.ca.gov/aaqm/qa/pqao/repository/rr_docs.htm.

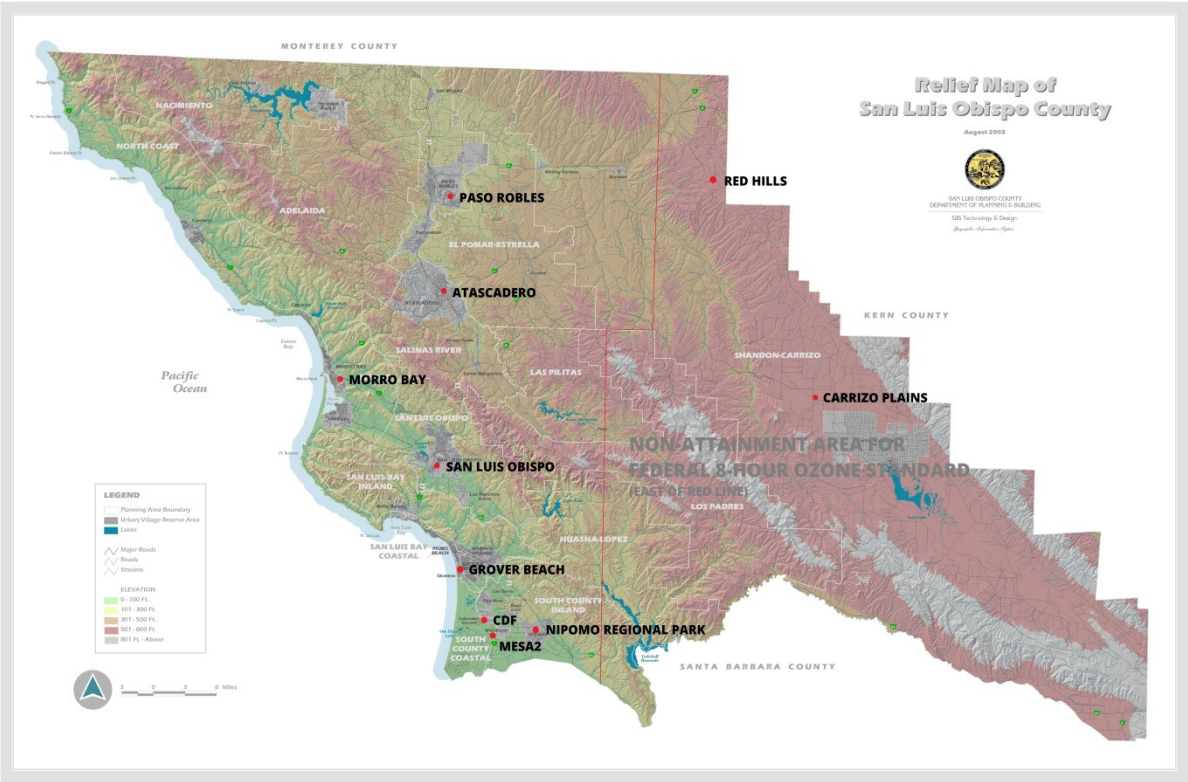


Figure 1: Locations of the 10 permanent SLAMS stations in San Luis Obispo County from May 2014 to May 2015. The thin red line depicts the boundary of the ozone non-attainment area.

Changes to Monitoring Network since the Previous ANP

Changes to the monitoring network since the publication of the last ANP in May of 2014 are summarized below.

Opened, Closed, and Relocated Stations

At the time of writing, no new stations have opened in the County, nor have any existing stations closed.

As noted in the letter accompanying the submittal of our 2014 ANP, the host of our Atascadero SLAMS requested we move the station in order to accommodate planned renovations and new construction at the site (Atascadero Fire Station #1 at 6005 Lewis Avenue). Initially we thought that simply shifting the station several feet to the west would be adequate to accommodate their plans; however, after additional discussions it was decided that the station be completely removed from the property. Lift Station #5 at 5599 Traffic Way is identified as a potential new location for the station. It is within 400 m (one quarter mile) of the original site (Figure 2). EPA was consulted and approved the new location; a limited period of parallel ozone and $PM_{2.5}$ monitoring suggested that any differences between these sites are negligible. See Appendix D for the EPA approval and Appendix E for a summary of the parallel monitoring. The station was relocated to this site in February 2015. All of the pollutants that were monitored at the original site (ozone, oxides of nitrogen, $PM_{2.5}$, PM_{10} and meteorology), continue to be monitored at the new site.

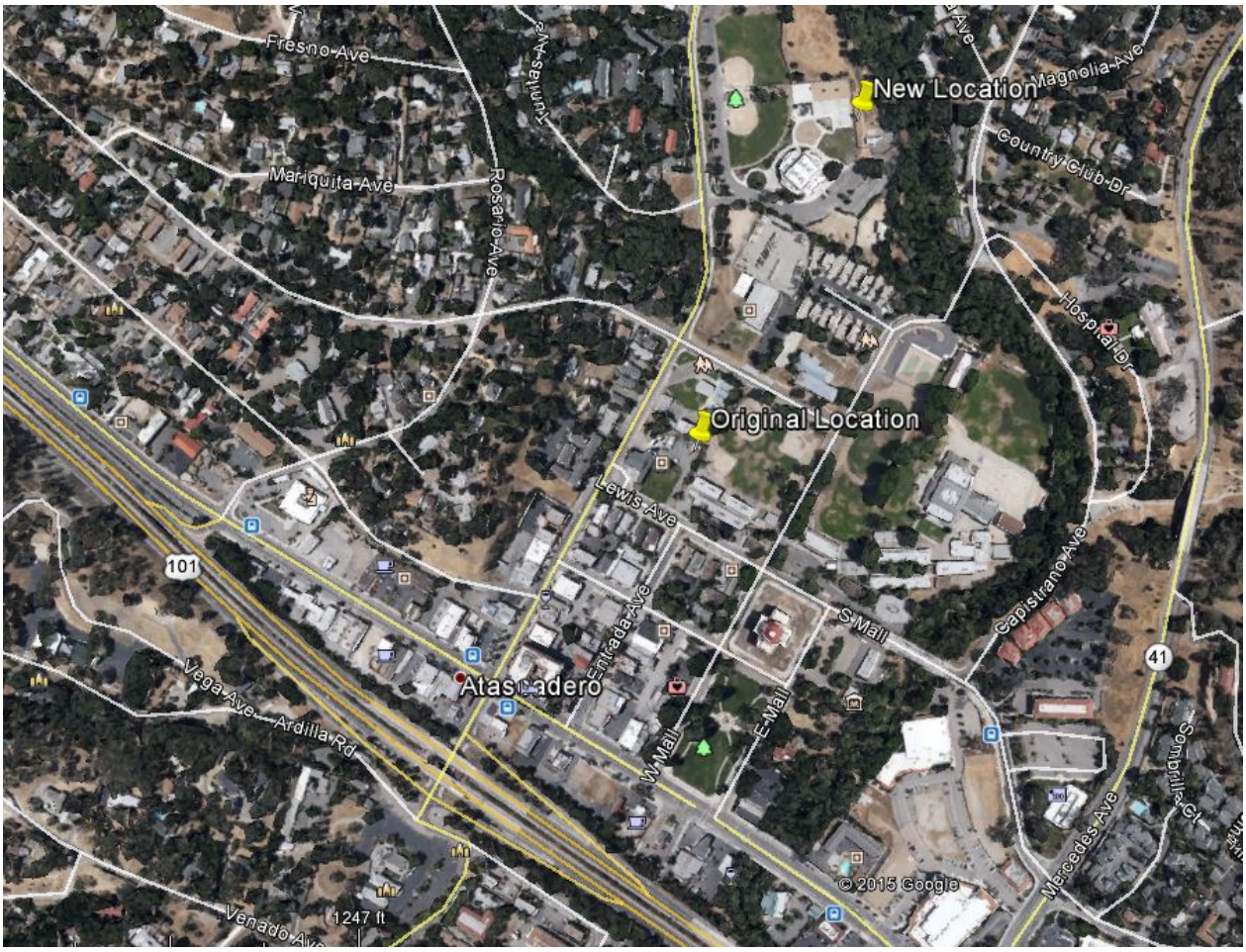


Figure 2: Locations of the original and new Atascadero ambient air monitoring sites.

For each monitor, the objective, spatial scale, and site type are the same for the new site as they were for the old site. It should be noted that simply shutting the station down and discontinuing monitoring in the area is precluded, as this is the 2014 ozone design value site for the Western San Luis Obispo County ozone attainment area. (See Figure 1 for the boundary between the attainment and non-attainment areas of the county). Discontinuation of ozone monitoring is also precluded by 40 CFR 58.14(c)(1), since the upper 90% confidence bound of mean of the last five years of design values (0.0642 ppm) is greater than 80% of the ozone NAAQS (0.060 ppm).[2] Finally, with a 25-year history of air monitoring, the site is highly valuable for tracking long-term air quality trends, and it is therefore highly desirable to continue monitoring at an equivalent site in the area.

[2] The 2010 through 2014 ozone design values are 0.065, 0.062, 0.063, 0.062, 0.063 ppm. Their mean and standard deviation are 0.0630 and 0.0012 ppm, respectively, and therefore the 90% confidence interval of the 5-year mean is 0.0618 to 0.0642 ppm.

Ozone Monitoring Network Changes

Other than the aforementioned relocation of the ozone monitor in Atascadero, there has been only one change to the network: the monitor at Red Hills was upgraded from a Teledyne-API 400A to a T400 in March 2015.

Particulate Monitoring Network Changes

Other than the relocation of the PM_{10} and $PM_{2.5}$ monitors in Atascadero, there have been no changes to the particulate monitoring network.

Nitrogen Dioxide Monitoring Network Changes

In addition to the relocation of the Atascadero NO_2 monitor, the Teledyne-API 200A instrument at this station was upgraded to a T200 instrument in November 2014.

Sulfur Dioxide Monitoring Network Changes

No changes were made to the sulfur dioxide monitoring network.

Other Changes

- The data loggers at the following sites were upgraded from ESC 8816s to ESC 8832s: Atascadero (June 2014), CDF (July 2014), Mesa2 (July 2014), and NRP (July 2014).
- The zero-air generator at Mesa2 was upgraded from a Teledyne-API 701 to a T701H in May 2014. The zero-air generator is a component of the gas calibration system at this site.
- A wall mounted air conditioning unit was installed at CDF in May 2014.
- In April 2014 the naturally aspirated temperature sensor at Carrizo Plains was replaced with a fan aspirated system (Met One Instruments 060A-2 probe and 076B radiation shield) and moved from a height of 3 meters to 7 meters. (This should have been mentioned in the last ANP but was inadvertently omitted.)
- In February 2015 the Climatronics temperature sensor at Atascadero failed and was replaced with a Met One Instruments system (060A-2 probe and 076B radiation shield).

Detailed Network Descriptions

Ozone Monitoring Network

All SLAMS in the county monitor for ozone except for CDF, Mesa2, and Grover Beach (see Table 2). The SLAMS network in San Luis Obispo County thus features ozone monitors located in Atascadero, Red Hills, Carrizo Plains, Paso Robles, Morro Bay, San Luis Obispo, and Nipomo Regional Park.

Atascadero – SLOCAPCD has operated an ozone monitor in Atascadero since 1988. As noted above, this station was moved in 2015 from a site located in the central business district of downtown Atascadero to a nearby city property. The original location was bounded on two sides by public schools, and the new site is adjacent to a community center. The monitor continues to be classified as population-oriented and neighborhood scale. It also records the highest ozone concentrations in the western San Luis Obispo attainment area. It provides a measurement of representative ozone concentration for the City of Atascadero. Ozone concentrations at this site exhibit strong diurnal fluctuations caused by the titration of ozone with oxides of nitrogen from nearby mobile and residential sources. Measured concentrations at this site are similar to those recorded at Paso Robles, and are often the highest among the five ozone monitors in the western portion of the County that is classified as attaining the federal ozone standard. The highest ozone concentrations at Atascadero occur when high pressure over the interior southwest U.S. causes transport of ozone and other pollutants into the county from the east. Under these infrequent conditions, transported ozone enhanced by local pollutants can cause highly elevated concentrations. The prevailing winds from the west and northwest help keep ozone levels at Atascadero low most of the time.

Carrizo Plains – Operated by SLOCAPCD since January 2006, this station monitors background levels and ozone transport from the interior areas of the state on a regional scale. The monitor is located in an outbuilding at the Carrizo Plains Elementary School. The ozone concentrations recorded here are second only to Red Hills in concentration and persistence; it is also located within the Eastern San Luis Obispo County non-attainment area.

Morro Bay – Operated since 1975 by SLOCAPCD, this site provides regional scale and general/background ozone monitoring. Located in downtown Morro Bay, the monitor generally measures background levels of ozone from the predominant northwest winds blowing off of the Pacific Ocean. Under unusual meteorological conditions, the site can record elevated ozone concentrations transported from urban areas as far south as the Los Angeles basin.

Nipomo Regional Park – Operated by SLOCAPCD since 1998, this station provides monitoring of background levels of ozone on a regional scale. Previously (1979 to 1996) ozone had been monitored in Nipomo on Wilson Street several miles away. The ozone concentrations measured at NRP are representative of interior portions of the Nipomo Mesa and are the highest recorded in the coastal region of San Luis Obispo County.

Paso Robles – Operated by ARB since 1974, this population-oriented neighborhood scale ozone monitor provides a representative ozone concentration for the suburban areas of the City of Paso

Robles. The conditions under which elevated ozone levels occur and the location's prevailing winds are similar to Atascadero.

Red Hills – Operated by SLOCAPCD since 2000, this station is located on the summit of the Red Hills at an elevation of about 2,000 feet. It is in a very sparsely populated area, near the community of Shandon. This regional scale site is often influenced by ozone transport from distant pollutant source areas outside of the County, and it consistently records the highest and most persistent ozone concentrations in the network; its site type is thus regional and maximum concentration. In early 2012, the eastern portion of the County was designated as marginally non-attainment for the federal 8-hr ozone standard based on the design value from this site.

San Luis Obispo – ARB has operated a population-oriented, neighborhood scale ozone monitor in the City of San Luis Obispo since 1970. The monitor has been at its current site since 2005. It provides a representative ozone concentration for the City of San Luis Obispo. The monitor is located in the urban area where ozone concentrations are significantly depleted by titration with local mobile and stationary NO_x sources. As a result the concentrations recorded here are often lower than at Morro Bay.

As noted in Table 2, the SLAMS site types employed by the existing ozone network are:

1. **Highest Concentration** – The Red Hills station typically records the highest ozone concentrations in the County. The high ozone levels tend to occur in the interior areas of the County during summer, either following long periods of wind stagnation, or as a result of offshore winds which can transport pollutants from interior regions of the state from distant sources to the northeast. Among the sites in the western portion of the County, which are classified as attaining the ozone standard, Atascadero and Paso Robles measure the highest concentration. In 2014, Atascadero had a higher design value than Paso Robles, but in previous years Paso Robles has often been higher.
2. **Population Exposure** – The Paso Robles, Atascadero, and San Luis Obispo monitors provide a good representation of the ozone levels in the larger cities of the County.
3. **Source Impact** – Because ozone is a secondary pollutant, the effect of emissions from any single source are experienced five to seven hours later and often many miles distant. As a regional pollutant, monitoring for specific sources of ozone is not performed.
4. **General/Background** – The monitors at Morro Bay, Carrizo Plains and Nipomo Regional Park provide regional background ozone levels.
5. **Regional Transport** – The stations located at Carrizo Plains and Red Hills provide excellent surveillance of regional transport of ozone in the interior part of the county. Coastal monitoring stations have provided evidence in the past of regional transport of ozone over the Pacific Ocean from distant urban sources.

Nitrogen Dioxide Monitoring Network

The SLAMS network in San Luis Obispo County features nitrogen dioxide (NO_2) monitors at Atascadero, Morro Bay, and Nipomo Regional Park. NO_2 levels have always been well below the state and federal standards at all locations in our County. For this reason NO_2 monitoring is most useful here as an indicator of depletion of ambient ozone through titration with nitric oxide. Having at least one NO_2 monitor in each geographical region of the County also serves a long-term air quality surveillance role.

Atascadero – Operated by SLOCAPCD since 1990 and relocated in 2015, this population-oriented monitor is considered neighborhood scale. This is the only NO_2 monitor in the Salinas River air basin, and it records the highest NO, NO_2 and NO_x levels in the County. The monitor's downtown location has established a strong diurnal inverse relationship between ozone and NO_2 levels caused by local mobile sources and residential and commercial combustion of natural gas.

Morro Bay – Operated by SLOCAPCD since 2001 this monitor is neighborhood scale and was established to monitor emissions from the Morro Bay power plant, located less than a mile upwind. The plant permanently closed in February 2014.

Nipomo Regional Park – Operated by the SLOCAPCD since 1998, this monitor is regional in scale and is representative of background concentrations on the Nipomo Mesa. The site's location in a large natural area away from local or mobile sources makes it ideal for regional surveillance of NO_2.

The SLAMS sites in the existing NO_2 network are:

1. **Highest Concentration** – The Atascadero monitor historically has measured the highest NO_2 concentrations in the county. NO_2 levels are the result of titration of ambient ozone by local sources of nitric oxide and as a result values are always relatively low. Levels have never exceeded the 1-hr NO_2 standard (100 ppb), with annual maximum 1-hr concentrations typically around 50% of the standard.
2. **General/Background** – With no significant local sources present, the monitors at Nipomo Regional Park and Morro Bay provide excellent information on coastal background levels of NO_2.

Regional Transport and Welfare-Related impacts of NO_2 are not currently addressed by the District's SLAMS network and are not thought to be significant. With the closure of the Morro Bay power plant in 2014—the only potentially significant point source of NO_2 in the County—no monitors in the network are considered to be source-oriented. The San Luis Obispo-Paso Robles MSA, does not have—nor per Appendix D, Section 4.3 of 40 CFR 58 is it required to have—any NO_2 sites for vulnerable populations, near-road NO_2 monitoring sites, or area-wide NO_2 sites.

Sulfur Dioxide Monitoring Network

The sulfur dioxide (SO_2) monitoring network in San Luis Obispo County currently consists of one station: Mesa2.

Mesa2 – Established in 1989 and operated by the SLOCAPCD since 2006, this monitor performs surveillance of a nearby oil refinery. It is considered middle scale and highest concentration for SO_2. Since it is located close to and downwind of a major source of SO_2 emissions, it is representative only of the immediate area. The station was sited to optimize surveillance of the refinery's nearby coke calciner, which has since been shut down. Nonetheless, the refinery remains the largest point source of SO_2 in the County, and during upsets this monitor can record concentrations approaching and sometimes exceeding the NAAQS. In addition to meeting NAAQS compliance objectives, this site is also vital for public information and emergency response.

The SLAMS SO_2 monitoring objectives met by the network are:

1. **Highest Concentration** – The monitor at Mesa2 currently records the highest SO_2 levels in the County.
2. **Source Impact** – The monitor at Mesa2 is invaluable in determining the SO_2 source impact upon the immediate region.

Monitoring objectives not addressed by the existing SO_2 network are: General/Background, Population, Regional Transport, and Welfare-Related. Historical SO_2 monitoring performed elsewhere in the county (at NRP from 1998-2006; Morro Bay, 1979-1995; Grover Beach, 1982-2004; and at decommissioned stations in Arroyo Grande "Ralcoa" (06-079-1005), 1991-2002, and "Mesa1" (06-079-3002), 1987-94) has provided good evidence that monitoring for these objectives is not needed. Furthermore, background levels of SO_2 in the County are believed to negligible, since more than 98% of hourly SO_2 levels from Mesa2 were 1 ppb or less in 2014.

Particulate Monitoring Network

The particulate monitoring network in San Luis Obispo County consists of six Federal Equivalent Method (FEM) PM_{10} monitors (Paso Robles, Atascadero, San Luis Obispo, Mesa2, CDF and Nipomo Regional Park) and four FEM $PM_{2.5}$ monitors (Atascadero, CDF, Mesa2 and San Luis Obispo). The PM_{10} network has been in place since 1988, and PM2.5 samplers began operation in 1999 in response to the establishment of a new federal standard for $PM_{2.5}$ in 1997. Originally all particulate monitoring in the County was performed as part of ARB's network, but eventually all monitors except those at Paso Robles and San Luis Obispo became part of the SLOCAPCD network. Note that for quality assurance the District remains part of the ARB PQAO. SLOCAPCD therefore relies on ARB to perform federally required audits of its particulate monitors and to meet federal collocation requirements.

Initially, all particulate sampling was conducted by filter-based Federal Reference Method (FRM) methods. With the advent of continuous monitoring technologies, all the FRM monitors in the County have been replaced with FEM monitors in recent years. These are continuous semi-real time monitors that report hourly PM concentrations. The hourly data has greatly improved the SLOCAPCD abilities to issue timely air quality forecast which is a significant benefit for the advancement of public health goals.

Atascadero – Operated by SLOCAPCD, PM_{10} monitoring has been conducted here since 1988, initially via a FRM and currently with a continuous FEM monitor. Collocated FRM $PM_{2.5}$ monitors began operation in 1999 and have since been replaced by a single FEM. All monitors are neighborhood in scale and representative of particulate concentrations in the City of Atascadero. As previously noted, the station was moved about 400m north of its original location in February 2015.

CDF – Originally established for the SLOCAPCD's Nipomo Mesa Phase 2 Particulate Study, this site has become a permanent part of SLAMS particulate network. The site features continuous FEM samplers for PM_{10} and $PM_{2.5}$, which are neighborhood in scale and measure source impacts from the ODSVRA. These monitors record the highest particulate levels in the County and are strongly influenced by the ODSVRA, located directly upwind. In 2012, extensive temporary monitoring on the Nipomo Mesa confirmed that this site is located within the 1 square mile sector of the study area that experiences the highest PM_{10} levels.[3]

Mesa2 – PM_{10} sampling began at this site in 1991, and the monitors have been operated by the SLOCAPCD since 2006. This site initially featured collocated FRM PM_{10} samplers that were replaced by a single continuous FEM PM_{10} monitor in 2009. A continuous $PM_{2.5}$ FEM monitor was installed at the same time. This site monitors source impacts from the nearby oil refinery and coastal dunes and the monitors are considered to be neighborhood scale. These monitors record some of the highest particulate levels in the County and are strongly influenced by the extensive coastal sand dunes and the ODSVRA located upwind.

Nipomo Regional Park – Operated at this location by SLOCAPCD since 1998, it replaced a site at Wilson Street in Nipomo that operated from 1990-96. The 1-in-6 day FRM PM_{10} sampler was replaced with a continuous FEM sampler in 2010. The monitor is regional in scale and is representative of PM_{10} concentrations on the Nipomo Mesa.

Paso Robles – Operated by ARB since 1991 this PM_{10} monitor is urban in scale and representative of the city of Paso Robles. The FRM sampler at this site was replaced with an FEM PM_{10} sampler in August 2009.

San Luis Obispo – Operated by ARB, a PM_{10} sampler has been in place since 1988, and a $PM_{2.5}$ sampler since 1999. ARB replaced the FRM samplers with continuous FEM instruments in 2011. These population-oriented monitors are neighborhood in scale and represent particulate concentrations in the City of San Luis Obispo.

Other Networks

San Luis Obispo County, which comprises the San Luis Obispo-Paso Robles MSA, is not required to have—nor does it have—any NCORE, PAMS, lead, carbon monoxide or near-road monitoring stations.

[3] San Luis Obispo County Air Pollution Control District, "South County Community Monitoring Project," January 2013. Available online: http://slocleanair.org/communitymonitoringproject

Proposed Network Changes and Improvements

The following modifications will likely occur in the 18 month period after the publication of this ANP.

New Stations and Station Closures and Relocations

Currently, there are no plans to establish any new SLAMS or to close or relocate any existing stations within the next 18 months. Note that with a population well below 500,000, the San Luis Obispo-Paso Robles MSA/CBSA[4] is not required to have any near-road NO_2, CO, or $PM_{2.5}$ monitors, and therefore SLOCAPCD has no plans to establish any such monitors.

Ozone Monitoring Network

The ozone monitor Carrizo Plains is scheduled to be upgraded from a Teledyne-API 400A instrument to a T400.

Nitrogen Dioxide Network

No changes to the nitrogen dioxide monitoring network are anticipated.

Sulfur Dioxide Monitoring Network

No changes to the sulfur dioxide monitoring network are anticipated.

Particulate Monitoring Network

No changes to the particulate monitoring network are anticipated.

Statement Regarding Review of Changes to the $PM_{2.5}$ Network

In the event that SLOCACPD needs to change the location of a $PM_{2.5}$ monitor that records violations of the NAAQS, the agency will notify EPA Region 9 and ARB contact points immediately, and work closely with ARB to formulate a plan for moving the site. The public will be notified of the plan and provided with an opportunity to comment for at least 30 days. Finally, the agency will submit formal notification to EPA. The SLOCAPCD intends to discuss and receive approval of any changes to our $PM_{2.5}$ Network—whether they affect monitors violating NAAQS or not—with ARB and EPA prior to making them, however unforeseen circumstances (e.g. unexpected loss of site access) may preclude this.

Other Changes and Improvements:

1. The ozone calibrator at Red Hills is scheduled to be upgraded from a Teledyne 703E to a T703. Pending funding, other calibrators may also be upgraded from E to T-series instruments.
2. All sites are scheduled to have high speed internet connections installed, and data retrieval will be upgraded from dial-up communication at 9600 baud to retrieval over the internet.

[4] San Luis Obispo County, the San Luis Obispo-Paso Robles MSA, and the San Luis Obispo-Paso Robles Core Based Statistical Area (CBSA) have identical borders and populations.

Non-SLAMS Air Monitoring in San Luis Obispo County

Oceano Dunes Monitoring

Frequent exceedences of the California Ambient Air Quality Standard for 24-hour PM_{10} (50 μg/m^3) are observed downwind of the ODSVRA on the Nipomo Mesa. To address these exceedences, the SLOCAPCD Board of Directors approved Coastal Dunes Dust Control Rule 1001. The rule requires, *inter alia*, the ODSVRA operator (i.e., California State Parks) to monitor PM_{10} levels in at least two locations within or downwind of the ODSVRA: one downwind of an area where off-road vehicle activity is allowed ("riding area monitor"), and another downwind of a comparable area where off-road vehicle activity is not allowed ("control site monitor"). This monitoring is to be performed with continuous FEM monitors.[5]

SLOCAPCD and the operator have agreed to use our CDF monitoring station as the riding area monitor. This site will continue to be operated by SLOCAPCD as a SLAMS. The operator is in the process of establishing the control site monitor within the ODSVRA. This site will host a MetOne BAM 1020 as its PM_{10} monitor and will also have meteorological equipment. Rule 1001 requires the PM_{10} monitor to be operational and reporting data by May 31, 2015. It will be operated by SLOCAPCD, and raw data will be available in real-time. Validated data will be reviewed by the District, and we will upload the data to the Air Quality System (AQS). This site will be designated as special purpose monitor in AQS rather than as a SLAMS.

Also of note, in 2013 the operator conducted a PM_{10} monitoring campaign within the ODSRVA using non-FEM, MetOne E-BAM monitors. The PM_{10} levels observed within the ODSVRA were generally much higher than those recorded downwind at our CDF and Mesa2 SLAMS. Contractors for the operator also made several hundred emissivity measurements of the dune surface. Reports summarizing the results of these campaigns are available on the District website.[5]

Price Canyon Monitoring

The Price Canyon Oilfield is located in Price Canyon between Pismo Beach and the Edna Valley wine region, just south of the City of San Luis Obispo. This area has long been plagued by odors emanating from the field. Therefore, as a condition of a permit for expanded oilfield operations, SLOCAPCD is requiring on-site ambient hydrogen sulfide (H_2S) monitoring. This is anticipated to begin by June 2015, and will employ a Thermo Scientific 450i H_2S analyzer. SLOCAPCD will have access to raw data in real-time. There is currently no plan to submit this data to AQS.

[5] San Luis Obispo County Air Pollution Control District, "Coastal Dunes Rule 1001," http://slocleanair.org/air/pmstudydata.php.

Air Quality Data

All of the SLAMS monitoring stations currently operating in the County are registered with the EPA and ARB and regularly report data to the EPA's AQS database, ARB's AQMIS2 website, and the airnow.gov website. Validated data from sites operated by SLOCAPCD are always submitted to AQS by end of the quarter following the quarter in which they were collected; usually data is submitted well before this deadline. Raw data is uploaded automatically to AQMIS and airnow.gov typically within an hour after being generated in the field. In addition, raw data for the current day and previous day is available on the SLOCAPCD website. All data generated at these stations are public information and are available in various formats. Table 3, below, lists some popular sources for these data.

SLOCAPCD, and when applicable ARB, regularly submit precision and accuracy data to AQS for all gaseous and particulate pollutants measured in the network. Additionally, in accordance with 40 CFR 58.15, SLOCAPCD certifies its AQS dataset for the previous year every spring. SLOCAPCD submitted a certification package for calendar year 2014 data to EPA on April 7, 2015.

Table 3: Sources for Air Quality Data from San Luis Obispo

Agency	Address for Data Requests	Website for Data Access	Data Available Online
SLOCAPCD	3433 Robert Ct., San Luis Obispo, CA 93401	www.slocleanair.org/air/lasthour.php	Raw data from last 24 to 48 hours. Only sites operated by SLOCAPCD.
ARB	P.O. Box 2815 Sacramento, CA 95812	AQMIS2: www.arb.ca.gov/aqmis2/aqdselect.php ADAM: www.arb.ca.gov/adam/	Most California sites, including all sites in San Luis Obispo County. Real-time raw data and archived validated data.
EPA	Ariel Rios Building 1200 Pennsylvania Ave NW Washington, DC 20460	AQS: www.epa.gov/ttn/airs/airsaqs/detaildata	Validated data from across the U.S. Typically one to several months behind current date.
AirNow.gov	U.S. EPA – OAQPS – ITG Mail Code E143-03 Research Triangle Park, NC 27711	www.airnow.gov	Current air quality conditions, nationwide. Based on real time, raw data.

Appendix A: Minimum Monitoring Requirements

The SLOCAPCD monitoring network meets the minimum monitoring requirements for all criteria pollutants as established in 40 CFR 58. The tables below list the criteria used to determine compliance with Federal regulations. The County population cited in these tables (269,637) is from the 2010 census; the California Department of Finance estimates the population to be 272,357 as of January 1, 2014.[6] Using this figure in lieu of the official census number does not change the required number of sites for any pollutant.

Minimum Monitoring Requirements for Ozone (O_3)

MSA	County	Population (Census Year)	8-hour Design Value (years)[a]	Design Value Site Name (AQS ID)	Number of Required Sites[b]	Number of Active Sites	Number of Additional Sites Needed
San Luis Obispo-Paso Robles	San Luis Obispo	269,637 (2010)	76 ppb (2012-14)	Red Hills (06-079-8005)	1	7	0

[a] This Design Value is for eastern San Luis Obispo County, which in early 2012 was designated as marginally non-attainment for the 2008 8-hour ozone standard. The design value for the rest of the county is 63 ppb (2012-14), and the corresponding design value site is Atascadero (06-079-8001).

[b] Refer to section 4.1 and Table D-2 of Appendix D to 40 CFR Part 58 for requirements.

Monitors required for SIP or Maintenance Plan: None

[6] California Department of Finance, "E-1, Current Population Estimates," May 1, 2014. http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/view.php

Minimum Monitoring Requirements for $PM_{2.5}$ SLAMs

MSA	County	Population (Census Year)	Annual Design Value (years)	Annual Design Value Site (AQS ID)	Daily Design Value (years)	Daily Design Value Site Name (AQS ID)	Number of Required SLAMS Sites[a]	Number of Active SLAMS Sites	Number of Additional SLAMS Sites Needed
San Luis Obispo-Paso Robles	San Luis Obispo	269,637 (2010)	11.6 μg/m^3 (2012-14)	CDF (06-079-2007)	30 μg/m^3 (2012-14)	CDF (06-079-2007)	1	4	0

[a] Refer to section 4.7.1 and Table D-5 of Appendix D to 40 CFR Part 58 for requirements.

Monitors required for SIP or Maintenance Plan: None

Minimum Monitoring Requirements for Continuous $PM_{2.5}$ Monitors

MSA	County	Population (Census Year)	Annual Design Value (years)	Annual Design Value Site (AQS ID)	Daily Design Value (years)	Daily Design Value Site Name (AQS ID)	Number of Required Continuous Monitors[a]	Number of Active Continuous Monitors	Number of Additional Continuous Monitors Needed
San Luis Obispo - Paso Robles	San Luis Obispo	269,637 (2010)	11.6 μg/m^3 (2012-14)	CDF (06-079-2007)	30 μg/m^3 (2012-14)	CDF (06-079-2007)	1	4	0

[a] Refer to section 4.7.2 and Table D-5 of Appendix D to 40 CFR Part 58 for requirements.

Monitors required for SIP or Maintenance Plan: None

Minimum Monitoring Requirements for PM_{10}

MSA	County	Population (Census Year)	Maximum Concentration (Year)	Maximum Concentration Site Name (AQS ID)	Number of Required Sites[a]	Number of Active Sites	Number of Additional Sites Needed
San Luis Obispo-Paso Robles	San Luis Obispo	269,637 (2010)	165 µg/m^3 (2014)	CDF (06-079-2007)	1-2	6	0

[a] Refer to section 4.6 and Table D-4 of Appendix D to 40 CFR Part 58 for requirements.

Monitors required for SIP or Maintenance Plan: None

Minimum Monitoring Requirements for Nitrogen Dioxide (NO_2)

CBSA	Population (Census Year)	Maximum AADT Count (Years)	Number of Required Near-road Monitors[a]	Number of Active Near-road Monitors	Number of Additional Near-road Monitors Needed	Number of Required Area-wide Monitors[a]	Number of Active Area-wide Monitors	Number of Additional Area-wide Monitors Needed
San Luis Obispo-Paso Robles	269,637 (2010)	76,000 (2013)	0	0	0	0	3	0

[a] Refer to section 4.3 of Appendix D to 40 CFR Part 58 for 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

Minimum Monitoring Requirements for Sulfur Dioxide (SO_2)

CBSA	County	Population (Census Year)	Total SO_2[a] (Tons/year)	Population Weighted Emissions Index (million person-tons/year)[b]	Number of Required Monitors[c]	Number of Active Monitors	Number of Additional Monitors Needed
San Luis Obispo-Paso Robles	San Luis Obispo	269,637 (2010)	272	73	0	1	0

[a] From the 2011 National Emissions Inventory. http://www.epa.gov/ttn/chief/net/2011inventory.html
[b] Product of CBSA population and SO_2 emissions, divided by one million.
[c] Refer to section 4.4 of Appendix D to 40 CFR Part 58 for requirements.
Monitors required for SIP or Maintenance Plan: None

Minimum Monitoring Requirements for Carbon Monoxide (CO)

CBSA	Population (Census Year)	Number of Required Near-Road Monitors[a]	Number of Active Near-Road Monitors	Number of Additional Monitors Needed
San Luis Obispo-Paso Robles	269,637 (2010)	0	0	0

[a] Refer to section 4.2 of Appendix D to 40 CFR Part 58 for requirements.
Monitors required for SIP or Maintenance Plan: None
EPA Regional Administrator-required monitors per section 4.2.2. of Appendix D to 40 CFR 58: None

Minimum Monitoring Requirements for Lead (Pb) at NCore

NCore Site	CBSA	Population (Census Year)	Number of Required Monitors[a]	Number of Active Monitors	Number of Additional Monitors Needed
none	San Luis Obispo-Paso Robles	269,637 (2010)	0	0	0

[a] Refer to section 4.5 of Appendix D to 40 CFR Part 58 for requirements.

Source-Oriented Lead Monitoring (Including Airports)

Source	Address	Pb Emissions (Tons/yr)	Emissions Inventory Source Data (Year)	Max 3-Month Design Value	Design Value Date	Number of Required Monitors[a]	Number of Active Monitors	Number of Additional Monitors Needed
none	n/a	n/a	n/a	n/a	n/a	0	0	0

[a] Refer to section 4.5 of Appendix D to 40 CFR Part 58 for requirements.

Monitors required for SIP or Maintenance Plan: None

EPA Regional Administrator-required monitors per section 4.5(c) of Appendix D to 40 CFR 58: None

Appendix B: Collocation Requirements

Particulate monitoring (PM_{10}, $PM_{2.5}$, and lead) is subject to the collocation requirements described in section 3 of Appendix A to 40 CFR 58. The requirements apply at the PQAO level, and SLOCAPCD is part of the ARB PQAO. All particulate monitors in San Luis Obispo County are MetOne 1020 Beta Attenuation Monitors (BAMs). These are continuous FEM instruments (PM_{10} method code: 122; $PM_{2.5}$ method code: 170). There are no collocated particulate monitors within the SLOCAPCD network; however as described below, there are collocated monitors within the ARB PQAO.

It is unknown whether collocation requirements for $PM_{2.5}$ are being met at the statewide PQAO level. According to ARB's most recent Annual Monitoring Report for Small Districts in California,[7] in 2013 there were 32 active $PM_{2.5}$ FEM BAM 1020 monitors (method 170) in the PQAO; thus five collocated monitors were needed: three FRM/FEM pairs and two FEM/FEM pairs. The report indicates that the ARB PQAO met the minimum FEM/FEM collocation requirements for its network, but needed to add a collocated FRM/FEM pair. The report discusses plans for establishing the needed FRM/FEM pair at the Madera site, and AQS shows an FRM reporting at this site starting in June 2014. Thus it would appear that the collocation requirement has been satisfied, though it is also possible that additional method 170 monitors have come online since then, triggering the need for additional collocated monitors. An AQS Certification and Concurrence Report (AMP600) for 2014 (executed in March 2015), reported a slightly different number of monitors, and also indicated that collocation requirements were not being met for that year. See Table B-1 below.

With regard to PM_{10} monitoring, all monitors in the District are continuous FEM BAMs, and thus there are no collocation requirements. Finally, lead monitoring is not done in the County, and thus there is no collocation requirement.

Table B- 1: Collocation Requirements for $PM_{2.5}$, Method Code 170

Data Source (see text)	Number of Primary Monitors	Number of Required Collocated Monitors	Number of Active Collocated FRM Monitors	Number of Active Collocated FEM Monitors (same method designation as primary)
ARB	32	5	2	2
AMP600	33	5	4 total collocated monitors, type not indicated	

[7] Air Resources Board, "Annual Monitoring Network Report for Twenty-three Districts in California," June 2014. http://www.arb.ca.gov/aqd/amnr/amnr2014draft.pdf.

Appendix C: Detailed Site Information

Local site name	**Paso Robles**	
AQS ID	06-079-0005	
GPS coordinates (decimal degrees)	35.61467, -120.65691	
Street Address	235 Santa Fe Ave, Paso Robles	
County	San Luis Obispo	
Distance to roadways (meters)	27 to Santa Fe Ave. 110 to Sherwood Rd. 180 to Creston Rd. 2700 to US 101	
Traffic count (AADT, year)	Santa Fe Ave.: 75 (estimated) Sherwood Rd.: 10,000 (2008) Creston Rd: 5,500 (2008) US101: 36,300 (2013)	
Groundcover (e.g. asphalt, dirt, sand)	Asphalt	
Representative statistical area name (i.e. MSA, CBSA, other)	San Luis Obispo – Paso Robles (MSA)	
Pollutant, POC	Ozone, 1	PM_{10}, 2
Primary / QA Collocated / Other	N/A	Primary
Parameter code	44201	81102
Basic monitoring objective(s)	NAAQS Comparison	Public info, NAAQS Comparison
Site type(s)	Population Exposure	Population Exposure
Monitor type(s)	SLAMS	SLAMS
Network Affiliation	N/A	N/A
Instrument manufacturer and model	API 400E	MetOne BAM 1020
Method code	087	122
FRM/FEM/ARM/other	FEM	FEM
Collecting Agency	ARB	ARB
Analytical Lab (i.e. weigh lab, toxics lab, other)	N/A	N/A
Reporting Agency	ARB	ARB
Spatial scale (e.g. micro, neighborhood)	Neighborhood	Neighborhood
Monitoring start date (MM/DD/YYYY)	09/01/1991	06/01/2013 [a]
Current sampling frequency (e.g. 1:3, continuous)	continuous	continuous
Calculated sampling frequency (e.g. 1:3/1:1)	continuous	continuous
Sampling season (MM/DD-MM/DD)	01/01-12/31	01/01-12/31
Probe height (meters)	6.2	5.2
Distance from supporting structure (meters)	2.9	1.9
Distance from obstructions on roof (meters)	N/A	N/A
Distance from obstructions not on roof (meters)	N/A	N/A
Distance from trees (meters)	N/A	N/A
Distance to furnace or incinerator flue (meters)	N/A	N/A
Distance between monitors fulfilling a QA Collocation requirement (meters)	N/A	N/A

Local site name	**Paso Robles**	
For low volume PM instruments, is any PM instrument within 1 m of the instrument?	N/A	No
For high volume PM instruments, is any PM instrument within 2m of the instrument?	N/A	N/A
Unrestricted airflow (degrees)	360	360
Probe material for reactive gases (e.g. Pyrex, stainless steel, Teflon)	Teflon	N/A
Residence time for reactive gases (seconds)	13.9	N/A
Will there be changes within the next 18 months?	No	No
Is it suitable for comparison against the annual PM2.5?	N/A	N/A
Frequency of flow rate verification for manual PM samplers	N/A	N/A
Frequency of flow rate verification for automated PM analyzers	N/A	bi-weekly
Frequency of one-point QC check for gaseous instruments	daily	N/A
Date of 2014 Annual Performance Evaluation for gaseous parameters	11/18/2014[b] 12/18/2014[c]	N/A
Dates of 2014 Semi-Annual Flow Rate Audits for PM monitors	N/A	5/14/2014 12/18/2014

[a] This instrument did not begin reporting PM_{10}-standard (88102) until 06/01/2013, but has been reporting PM_{10}-actual (85101) since 08/11/2009.
[b] Performed by ARB.
[c] Performed by EPA.

Local site name	**Grover Beach**
AQS ID	06-079-2001
GPS coordinates (decimal degrees)	35.12393, -120.63222
Street Address	9 Le Sage Drive, Grover Beach
County	San Luis Obispo
Distance to roadways (meters)	10 to Le Sage Drive 120 to US 1
Traffic count (AADT, year)	Le Sage: 300 (estimated) US 1: 9000 (2013)
Groundcover (e.g. asphalt, dirt, sand)	Cement and dirt
Representative statistical area name (i.e. MSA, CBSA, other)	San Luis Obispo – Paso Robles (MSA)
Pollutant, POC	None (this is meteorology-only station)

Local site name	**Mesa2**		
AQS ID	06-079-2004		
GPS coordinates (decimal degrees)	35.02079, -120.56389		
Street Address	1300 Guadalupe Rd., Nipomo		
County	San Luis Obispo		
Distance to roadways (meters)	40 to Guadalupe Rd. (US 1)		
Traffic count (AADT, year)	Guadalupe Rd. (US 1): 6000 (2013)		
Groundcover (e.g. asphalt, dirt, sand)	Vegetative		
Representative statistical area name (i.e. MSA, CBSA, other)	San Luis Obispo – Paso Robles (MSA)		
Pollutant, POC	SO_2, 1	$PM_{2.5}$, 1	PM_{10}, 3
Primary / QA Collocated / Other	N/A	Primary	Primary
Parameter code	42401	88101	81102
Basic monitoring objective(s)	NAAQS Comparison	NAAQS Comparison	NAAQS Comparison
Site type(s)	Source Oriented, Max Concentration	Source Oriented	Source Oriented
Monitor type(s)	SLAMS	SLAMS	SLAMS
Network Affiliation	N/A	N/A	N/A
Instrument manufacturer and model	API T100U	MetOne BAM 1020	MetOne BAM 1020
Method code	100	170	122
FRM/FEM/ARM/other	FEM	FEM	FEM
Collecting Agency	SLOCAPCD	SLOCAPD	SLOCAPCD
Analytical Lab (i.e. weigh lab, toxics lab, other)	N/A	N/A	N/A
Reporting Agency	SLOCAPCD	SLOCAPCD	SLOCAPCD
Spatial scale (e.g. micro, neighborhood)	Middle	Neighborhood	Neighborhood
Monitoring start date (MM/DD/YYYY)	05/01/1989	07/01/2009	07/01/2009
Current sampling frequency (e.g. 1:3, continuous)	continuous	continuous	continuous
Calculated sampling frequency (e.g. 1:3/1:1)	continuous	continuous	continuous
Sampling season (MM/DD-MM/DD)	01/01-12/31	01/01-12/31	01/01-12/31
Probe height (meters)	4.8	4.8	4.8
Distance from supporting structure (meters)	1.3	1.3	1.3
Distance from obstructions on roof (meters)	N/A	N/A	N/A
Distance from obstructions not on roof (meters)	N/A	N/A	N/A
Distance from trees (meters)	N/A	N/A	N/A
Distance to furnace or incinerator flue (meters)	N/A	N/A	N/A
Distance between monitors fulfilling a QA Collocation requirement (meters)	N/A	N/A	N/A
For low volume PM instruments, is any PM instrument within 1 m of the instrument?	N/A	No	No
For high volume PM instruments, is any PM	N/A	N/A	N/A

Local site name	**Mesa2**		
instrument within 2m of the instrument?			
Unrestricted airflow (degrees)	360	360	360
Probe material for reactive gases (e.g. Pyrex, stainless steel, Teflon)	Teflon	N/A	N/A
Residence time for reactive gases (seconds)	8.1	N/A	N/A
Will there be changes within the next 18 months?	No	No	No
Is it suitable for comparison against the annual PM2.5?	N/A	Yes	N/A
Frequency of flow rate verification for manual PM samplers	N/A	N/A	N/A
Frequency of flow rate verification for automated PM analyzers	N/A	bi-weekly	bi-weekly
Frequency of one-point QC check for gaseous instruments	daily	N/A	N/A
Date of 2014 Annual Performance Evaluation for gaseous parameters	5/20/2014	N/A	N/A
Dates of 2014 Semi-Annual Flow Rate Audits for PM monitors	N/A	5/20/2014 10/30/2014	5/20/2014 10/30/2014

Local site name	**San Luis Obispo**		
AQS ID	06-079-2006		
GPS coordinates (decimal degrees)	35.25651, -120.66945		
Street Address	3220 South Higuera St., San Luis Obispo		
County	San Luis Obispo		
Distance to roadways (meters)	57 to South Higuera St. 450 to US 101		
Traffic count (AADT, year)	South Higuera St.: 13,980 (2012) US 101: 58,600 (2013)		
Groundcover (e.g. asphalt, dirt, sand)	Vegetative		
Representative statistical area name (i.e. MSA, CBSA, other)	San Luis Obispo – Paso Robles (MSA)		
Pollutant, POC	O_3, 1	$PM_{2.5}$, 3	PM_{10}, 2
Primary / QA Collocated / Other	N/A	Primary	Primary
Parameter code	44201	88101	81102
Basic monitoring objective(s)	NAAQS Comparison	NAAQS Comparison	NAAQS Comparison, Public Info
Site type(s)	Population Exposure	General/ Background	Population Exposure
Monitor type(s)	SLAMS	SLAMS	SLAMS
Network Affiliation	N/A	N/A	N/A
Instrument manufacturer and model	API T400	MetOne BAM 1020	MetOne BAM 1020
Method code	087	170	122
FRM/FEM/ARM/other	FEM	FEM	FEM
Collecting Agency	ARB	ARB	ARB
Analytical Lab (i.e. weigh lab, toxics lab, other)	N/A	N/A	N/A
Reporting Agency	ARB	ARB	ARB
Spatial scale (e.g. micro, neighborhood)	Neighborhood	Neighborhood	Neighborhood
Monitoring start date (MM/DD/YYYY)	09/21/2005	03/15/2011	06/01/2013 [a]
Current sampling frequency (e.g. 1:3, continuous)	continuous	continuous	continuous
Calculated sampling frequency (e.g. 1:3/1:1)	continuous	continuous	continuous
Sampling season (MM/DD-MM/DD)	01/01-12/31	01/01-12/31	01/01-12/31
Probe height (meters)	12.8	12.8	12.8
Distance from supporting structure (meters)	1.8	2.0	2.0
Distance from obstructions on roof (meters)	N/A	N/A	N/A
Distance from obstructions not on roof (meters)	N/A	N/A	N/A
Distance from trees (meters)	N/A	N/A	N/A
Distance to furnace or incinerator flue (meters)	N/A	N/A	N/A
Distance between monitors fulfilling a QA Collocation requirement (meters)	N/A	N/A	N/A
For low volume PM instruments, is any PM	N/A	No	No

Local site name	**San Luis Obispo**		
instrument within 1 m of the instrument?			
For high volume PM instruments, is any PM instrument within 2m of the instrument?	N/A	N/A	N/A
Unrestricted airflow (degrees)	360	360	360
Probe material for reactive gases (e.g. Pyrex, stainless steel, Teflon)	Teflon	N/A	N/A
Residence time for reactive gases (seconds)	8.7	N/A	N/A
Will there be changes within the next 18 months?	No	No	No
Is it suitable for comparison against the annual PM2.5?	N/A	Yes	N/A
Frequency of flow rate verification for manual PM samplers	N/A	N/A	N/A
Frequency of flow rate verification for automated PM analyzers	N/A	bi-weekly	bi-weekly
Frequency of one-point QC check for gaseous instruments	daily	N/A	N/A
Date of 2014 Annual Performance Evaluation for gaseous parameters	11/18/2014	N/A	N/A
Dates of 2014 Semi-Annual Flow Rate Audits for PM monitors	N/A	5/14/2014 11/18/2014	5/14/2014 11/18/2014

[a] This instrument did not begin reporting PM_{10}-standard (88102) until 06/01/2013, but has been reporting PM_{10}-actual (85101) since 03/15/2011 as 06-079-2006-85101-3.

Local site name	**CDF**	
AQS ID	06-079-2007	
GPS coordinates (decimal degrees)	35.04673, -120.58777	
Street Address	2391 Willow Rd., Arroyo Grande	
County	San Luis Obispo	
Distance to roadways (meters)	53 to Willow Rd. (US 1).	
Traffic count (AADT, year)	Willow Rd. (US1): 6,500	
Groundcover (e.g. asphalt, dirt, sand)	Vegetative, Sand	
Representative statistical area name (i.e. MSA, CBSA, other)	San Luis Obispo – Paso Robles (MSA)	
Pollutant, POC	$PM_{2.5}$, 1	PM_{10}, 2
Primary / QA Collocated / Other	Primary	Primary
Parameter code	44201	81102
Basic monitoring objective(s)	NAAQS Comparison	NAAQS Comparison
Site type(s)	Max Concentration, Source Oriented	Max Concentration, Source Oriented
Monitor type(s)	SLAMS	SLAMS
Network Affiliation	N/A	N/A
Instrument manufacturer and model	MetOne BAM 1020	MetOne BAM 1020
Method code	170	122
FRM/FEM/ARM/other	FEM	FEM
Collecting Agency	SLOCAPCD	SLOCAPCD
Analytical Lab (i.e. weigh lab, toxics lab, other)	N/A	N/A
Reporting Agency	SLOCAPCD	SLOCAPCD
Spatial scale (e.g. micro, neighborhood)	Neighborhood	Neighborhood
Monitoring start date (MM/DD/YYYY)	08/01/2010	01/01/2010
Current sampling frequency (e.g. 1:3, continuous)	continuous	continuous
Calculated sampling frequency (e.g. 1:3/1:1)	continuous	continuous
Sampling season (MM/DD-MM/DD)	01/01-12/31	01/01-12/31
Probe height (meters)	4.0	4.0
Distance from supporting structure (meters)	1.4	1.4
Distance from obstructions on roof (meters)	N/A	N/A
Distance from obstructions not on roof (meters)	N/A	N/A
Distance from trees (meters)	N/A	N/A
Distance to furnace or incinerator flue (meters)	N/A	N/A
Distance between monitors fulfilling a QA Collocation requirement (meters)	N/A	N/A
For low volume PM instruments, is any PM instrument within 1 m of the instrument?	N/A	No
For high volume PM instruments, is any PM instrument within 2m of the instrument?	N/A	N/A
Unrestricted airflow (degrees)	360	360
Probe material for reactive gases (e.g. Pyrex, stainless steel, Teflon)	N/A	N/A

Local site name	**CDF**	
Residence time for reactive gases (seconds)	N/A	N/A
Will there be changes within the next 18 months?	No	No
Is it suitable for comparison against the annual PM2.5?	Yes	N/A
Frequency of flow rate verification for manual PM samplers	N/A	N/A
Frequency of flow rate verification for automated PM analyzers	bi-weekly	bi-weekly
Frequency of one-point QC check for gaseous instruments	N/A	N/A
Date of 2014 Annual Performance Evaluation for gaseous parameters	N/A	N/A
Dates of 2014 Semi-Annual Flow Rate Audits for PM monitors	5/20/2014 10/30/2014	5/20/2014 10/30/2014

Local site name	**Morro Bay**	
AQS ID	06-079-3001	
GPS coordinates (decimal degrees)	35.36640, -120.84268	
Street Address	899 Morro Bay Blvd., Morro Bay	
County	San Luis Obispo	
Distance to roadways (meters)	37 to Morro Bay Blvd. 220 to CA 1	
Traffic count (AADT, year)	Morro Bay Blvd.: 12,400 (2006) CA 1: 20,600 (2013)	
Groundcover (e.g. asphalt, dirt, sand)	Paved	
Representative statistical area name (i.e. MSA, CBSA, other)	San Luis Obispo – Paso Robles (MSA)	
Pollutant, POC	O_3, 1	NO_2, 1
Primary / QA Collocated / Other	N/A	Primary
Parameter code	44201	42602
Basic monitoring objective(s)	NAAQS Comparison	NAAQS Comparison
Site type(s)	General/Background	General/Background
Monitor type(s)	SLAMS	SLAMS
Network Affiliation	N/A	N/A
Instrument manufacturer and model	API 400A	API T200U
Method code	087	599
FRM/FEM/ARM/other	FEM	FRM
Collecting Agency	SLOCAPCD	SLOCAPCD
Analytical Lab (i.e. weigh lab, toxics lab, other)	N/A	N/A
Reporting Agency	SLOCAPCD	SLOCAPCD
Spatial scale (e.g. micro, neighborhood)	Regional	Neighborhood
Monitoring start date (MM/DD/YYYY)	01/01/1981	06/01/2001
Current sampling frequency (e.g. 1:3, continuous)	continuous	continuous
Calculated sampling frequency (e.g. 1:3/1:1)	continuous	continuous
Sampling season (MM/DD-MM/DD)	01/01-12/31	01/01-12/31
Probe height (meters)	4.0	4.0
Distance from supporting structure (meters)	1.4	1.4
Distance from obstructions on roof (meters)	N/A	N/A
Distance from obstructions not on roof (meters)	N/A	N/A
Distance from trees (meters)	N/A	N/A
Distance to furnace or incinerator flue (meters)	N/A	N/A
Distance between monitors fulfilling a QA Collocation requirement (meters)	N/A	N/A
For low volume PM instruments, is any PM instrument within 1 m of the instrument?	N/A	N/A
For high volume PM instruments, is any PM instrument within 2m of the instrument?	N/A	N/A
Unrestricted airflow (degrees)	360	360
Probe material for reactive gases (e.g. Pyrex, stainless steel, Teflon)	Teflon	Teflon

Local site name	**Morro Bay**	
Residence time for reactive gases (seconds)	7.6	7.0
Will there be changes within the next 18 months?	No	No
Is it suitable for comparison against the annual PM2.5?	N/A	N/A
Frequency of flow rate verification for manual PM samplers	N/A	N/A
Frequency of flow rate verification for automated PM analyzers	N/A	N/A
Frequency of one-point QC check for gaseous instruments	daily	daily
Date of 2014 Annual Performance Evaluation for gaseous parameters	03/12/2014	03/12/2014
Dates of 2014 Semi-Annual Flow Rate Audits for PM monitors	N/A	N/A

Local site name	**Nipomo Regional Park (NRP)**		
AQS ID	06-079-4002		
GPS coordinates (decimal degrees)	35.03150, -120.50101		
Street Address	W. Tefft St. and Pomeroy Rd., Nipomo		
County	San Luis Obispo		
Distance to roadways (meters)	500 To Tefft St. 240 to Pomeroy Rd.		
Traffic count (AADT, year)	Tefft St.: 1,500 (2009) Pomeroy Rd.: 6400 (2008)		
Groundcover (e.g. asphalt, dirt, sand)	Vegetative		
Representative statistical area name (i.e. MSA, CBSA, other)	San Luis Obispo – Paso Robles (MSA)		
Pollutant, POC	O_3, 1	NO_2, 1	PM_{10}, 2
Primary / QA Collocated / Other	N/A	Primary	Primary
Parameter code	44201	42602	81102
Basic monitoring objective(s)	NAAQS Comparison	NAAQS Comparison	NAAQS Comparison
Site type(s)	General/ Background	General/ Background	General/ Background
Monitor type(s)	SLAMS	SLAMS	SLAMS
Network Affiliation	N/A	N/A	N/A
Instrument manufacturer and model	API 400E	API T200U	MetOne BAM 1020
Method code	087	599	122
FRM/FEM/ARM/other	FEM	FRM	FEM
Collecting Agency	SLOCAPCD	SLOCAPCD	SLOCAPCD
Analytical Lab (i.e. weigh lab, toxics lab, other)	N/A	N/A	N/A
Reporting Agency	SLOCAPCD	SLOCAPCD	SLOCAPCD
Spatial scale (e.g. micro, neighborhood)	Regional	Regional	Regional
Monitoring start date (MM/DD/YYYY)	11/01/1998	11/01/1998	05/16/2010
Current sampling frequency (e.g. 1:3, continuous)	continuous	continuous	continuous
Calculated sampling frequency (e.g. 1:3/1:1)	continuous	continuous	continuous
Sampling season (MM/DD-MM/DD)	01/01-12/31	01/01-12/31	01/01-12/31
Probe height (meters)	4.0	4.0	4.7
Distance from supporting structure (meters)	1.0	1.0	1.7
Distance from obstructions on roof (meters)	N/A	N/A	N/A
Distance from obstructions not on roof (meters)	N/A	N/A	N/A
Distance from trees (meters)	N/A	N/A	N/A
Distance to furnace or incinerator flue (meters)	N/A	N/A	N/A
Distance between monitors fulfilling a QA Collocation requirement (meters)	N/A	N/A	N/A
For low volume PM instruments, is any PM instrument within 1 m of the instrument?	N/A	N/A	No

Local site name	**Nipomo Regional Park (NRP)**		
For high volume PM instruments, is any PM instrument within 2m of the instrument?	N/A	N/A	N/A
Unrestricted airflow (degrees)	360	360	360
Probe material for reactive gases (e.g. Pyrex, stainless steel, Teflon)	Teflon	Teflon	N/A
Residence time for reactive gases (seconds)	7.4	8.4	N/A
Will there be changes within the next 18 months?	No	No	No
Is it suitable for comparison against the annual PM2.5?	N/A	N/A	N/A
Frequency of flow rate verification for manual PM samplers	N/A	N/A	N/A
Frequency of flow rate verification for automated PM analyzers	N/A	N/A	bi-weekly
Frequency of one-point QC check for gaseous instruments	daily	daily	N/A
Date of 2014 Annual Performance Evaluation for gaseous parameters	05/20/2014	05/20/2014	N/A
Dates of 2014 Semi-Annual Flow Rate Audits for PM monitors	N/A	N/A	5/20/2014 10/30/2014

Local site name	**Atascadero (original site)**			
AQS ID	06-079-8001			
GPS coordinates (decimal degrees)	35.49153, -120.66799			
Street Address	6005 Lewis Ave., Atascadero, CA			
County	San Luis Obispo			
Distance to roadways (meters)	62 to Traffic Way 68 to Lewis Ave. 400 to US 101 500 to CA 41			
Traffic count (AADT, year)	Traffic Way: < 7,400 (2014) [a] Lewis Ave.: < 2,500 (2014) [a] US 101: 58,600 (2013) CA 41: 10,400 (2013)			
Groundcover (e.g. asphalt, dirt, sand)	Asphalt			
Representative statistical area name (i.e. MSA, CBSA, other)	San Luis Obispo – Paso Robles (MSA)			
Pollutant, POC	O_3, 1	NO_2, 1	$PM_{2.5}$, 3	PM_{10}, 3
Primary / QA Collocated / Other	N/A	Primary	Primary	Primary
Parameter code	44201	42602	88101	81102
Basic monitoring objective(s)	NAAQS Comparison	NAAQS Comparison	NAAQS Comparison	NAAQS Comparison
Site type(s)	Population Exposure, Max Concentration	Population Exposure, Max Concentration	Population Exposure	Population Exposure
Monitor type(s)	SLAMS	SLAMS	SLAMS	SLAMS
Network Affiliation	N/A	N/A	N/A	N/A
Instrument manufacturer and model	API T400	API T200	MetOne BAM 1020	MetOne BAM 1020
Method code	087	099	170	122
FRM/FEM/ARM/other	FEM	FRM	FEM	FEM
Collecting Agency	SLOCAPCD	SLOCAPCD	SLOCAPCD	SLOCAPCD
Analytical Lab (i.e. weigh lab, toxics lab, other)	N/A	N/A	N/A	N/A
Reporting Agency	SLOCAPCD	SLOCAPCD	SLOCAPCD	SLOCAPCD
Spatial scale (e.g. micro, neighborhood)	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Monitoring start date (MM/DD/YYYY)	10/01/1988	08/01/1990	06/01/2009	09/07/2010
Current sampling frequency (e.g. 1:3, continuous)	continuous	continuous	continuous	continuous
Calculated sampling frequency (e.g. 1:3/1:1)	continuous	continuous	continuous	continuous
Sampling season (MM/DD-MM/DD)	01/01-12/31	01/01-12/31	01/01-12/31	01/01-12/31
Probe height (meters)	5.0	5.0	5.8	5.3
Distance from supporting structure (meters)	1.4	1.4	2.2	1.7
Distance from obstructions on roof (meters)	N/A	N/A	N/A	N/A
Distance from obstructions not on roof (meters)	N/A	N/A	N/A	N/A
Distance from trees (meters)	N/A	N/A	N/A	N/A
Distance to furnace or incinerator flue	N/A	N/A	N/A	N/A

Local site name	**Atascadero (original site)**			
(meters)				
Distance between monitors fulfilling a QA Collocation requirement (meters)	N/A	N/A	N/A	N/A
For low volume PM instruments, is any PM instrument within 1 m of the instrument?	N/A	N/A	N/A	No
For high volume PM instruments, is any PM instrument within 2m of the instrument?	N/A	N/A	N/A	N/A
Unrestricted airflow (degrees)	360	360	360	360
Probe material for reactive gases (e.g. Pyrex, stainless steel, Teflon)	Teflon	Teflon	N/A	N/A
Residence time for reactive gases (seconds)	9.5	8.1	N/A	N/A
Will there be changes within the next 18 months?	No	No	No	No
Is it suitable for comparison against the annual PM2.5?	N/A	N/A	Yes	N/A
Frequency of flow rate verification for manual PM samplers	N/A	N/A	N/A	N/A
Frequency of flow rate verification for automated PM analyzers	N/A	N/A	bi-weekly	bi-weekly
Frequency of one-point QC check for gaseous instruments	daily	daily	N/A	N/A
Date of 2014 Annual Performance Evaluation for gaseous parameters	05/20/2014	05/20/2014	N/A	N/A
Dates of 2014 Semi-Annual Flow Rate Audits for PM monitors	N/A	N/A	5/20/2014 10/30/2014	5/20/2014 10/30/2014

[a] Traffic counts were conducted only during peak morning and afternoon hours along these streets. Along this stretch of Traffic Way, a total of 1,233 vehicles were counted during these four hours, therefore six times this figure (7,398) represents the likely maximum AADT. Likewise, the vehicle count along Lewis Ave. during the four peak commute hours was 415, so 2,490 represents the likely maximum AADT.

Local site name	**Atascadero (new site)**			
AQS ID	06-079-8002			
GPS coordinates (decimal degrees)	35.49453, -120.66617			
Street Address	5599 Traffic Way, Atascadero, CA			
County	San Luis Obispo			
Distance to roadways (meters)	163 to Traffic Way 770 to US 101 330 to CA 41			
Traffic count (AADT, year)	Traffic Way: < 7,400 (2014)[a] US 101: 58,600 (2013) CA 41: 10,400 (2013)			
Groundcover (e.g. asphalt, dirt, sand)	Vegetative			
Representative statistical area name (i.e. MSA, CBSA, other)	San Luis Obispo – Paso Robles (MSA)			
Pollutant, POC	O_3, 1	NO_2, 1	$PM_{2.5}$, 3	PM_{10}, 3
Primary / QA Collocated / Other	N/A	Primary	Primary	Primary
Parameter code	44201	42602	88101	81102
Basic monitoring objective(s)	NAAQS Comparison	NAAQS Comparison	NAAQS Comparison	NAAQS Comparison
Site type(s)	Population Exposure, Max Concentration	Population Exposure, Max Concentration	Population Exposure	Population Exposure
Monitor type(s)	SLAMS	SLAMS	SLAMS	SLAMS
Network Affiliation	N/A	N/A	N/A	N/A
Instrument manufacturer and model	API T400	API T200	MetOne BAM 1020	MetOne BAM 1020
Method code	087	099	170	122
FRM/FEM/ARM/other	FEM	FRM	FEM	FEM
Collecting Agency	SLOCAPCD	SLOCAPCD	SLOCAPCD	SLOCAPCD
Analytical Lab (i.e. weigh lab, toxics lab, other)	N/A	N/A	N/A	N/A
Reporting Agency	SLOCAPCD	SLOCAPCD	SLOCAPCD	SLOCAPCD
Spatial scale (e.g. micro, neighborhood)	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Monitoring start date (MM/DD/YYYY)	02/25/2015	02/25/2015	02/25/2015	02/25/2015
Current sampling frequency (e.g. 1:3, continuous)	continuous	continuous	continuous	continuous
Calculated sampling frequency (e.g. 1:3/1:1)	continuous	continuous	continuous	continuous
Sampling season (MM/DD-MM/DD)	01/01-12/31	01/01-12/31	01/01-12/31	01/01-12/31
Probe height (meters)	5.0	5.0	5.8	5.3
Distance from supporting structure (meters)	1.4	1.4	2.2	1.7
Distance from obstructions on roof (meters)	N/A	N/A	N/A	N/A
Distance from obstructions not on roof (meters)	N/A	N/A	N/A	N/A
Distance from trees (meters)	N/A	N/A	N/A	N/A
Distance to furnace or incinerator flue (meters)	N/A	N/A	N/A	N/A
Distance between monitors fulfilling a QA	N/A	N/A	N/A	N/A

Local site name	**Atascadero (new site)**			
Collocation requirement (meters)				
For low volume PM instruments, is any PM instrument within 1 m of the instrument?	N/A	N/A	N/A	No
For high volume PM instruments, is any PM instrument within 2m of the instrument?	N/A	N/A	N/A	N/A
Unrestricted airflow (degrees)	360	360	360	360
Probe material for reactive gases (e.g. Pyrex, stainless steel, Teflon)	Teflon	Teflon	N/A	N/A
Residence time for reactive gases (seconds)	9.5	8.1	N/A	N/A
Will there be changes within the next 18 months?	No	No	No	No
Is it suitable for comparison against the annual PM2.5?	N/A	N/A	Yes	N/A
Frequency of flow rate verification for manual PM samplers	N/A	N/A	N/A	N/A
Frequency of flow rate verification for automated PM analyzers	N/A	N/A	bi-weekly	bi-weekly
Frequency of one-point QC check for gaseous instruments	daily	daily	N/A	N/A
Date of 2014 Annual Performance Evaluation for gaseous parameters	N/A	N/A	N/A	N/A
Dates of 2014 Semi-Annual Flow Rate Audits for PM monitors	N/A	N/A	N/A	N/A

[a] Traffic counts were conducted only during peak morning and afternoon hours along this street. Along this stretch of Traffic Way, a total of 1,233 vehicles were counted during these four hours, therefore six times this figure (7,398) represents the likely maximum AADT.

Local site name	**Red Hills**
AQS ID	06-079-8005
GPS coordinates (decimal degrees)	35.64366, -120.23134
Street Address	3601 Gillis Canyon Rd., Shandon
County	San Luis Obispo
Distance to roadways (meters)	100 to Gillis Canyon Rd. 1740 to Bitterwater Rd. 10,400 to CA 41
Traffic count (AADT, year)	Gillis Canyon Rd.: 23 (2008) Bltterwater Rd.: 51 (2011) CA 41: 1,470 (2013)
Groundcover (e.g. asphalt, dirt, sand)	Vegetative
Representative statistical area name (i.e. MSA, CBSA, other)	San Luis Obispo – Paso Robles (MSA)
Pollutant, POC	O_3, 1
Primary / QA Collocated / Other	N/A
Parameter code	44201
Basic monitoring objective(s)	NAAQS Comparison
Site type(s)	Regional Transport, Max Concentration
Monitor type(s)	SLAMS
Network Affiliation	N/A
Instrument manufacturer and model	API T400
Method code	087
FRM/FEM/ARM/other	FEM
Collecting Agency	SLOCAPCD
Analytical Lab (i.e. weigh lab, toxics lab, other)	N/A
Reporting Agency	SLOCAPCD
Spatial scale (e.g. micro, neighborhood)	Regional
Monitoring start date (MM/DD/YYYY)	07/01/2000
Current sampling frequency (e.g. 1:3, continuous)	continuous
Calculated sampling frequency (e.g. 1:3/1:1)	continuous
Sampling season (MM/DD-MM/DD)	01/01-12/31
Probe height (meters)	4.7
Distance from supporting structure (meters)	1.2
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	N/A
Distance to furnace or incinerator flue (meters)	N/A
Distance between monitors fulfilling a QA Collocation requirement (meters)	N/A
For low volume PM instruments, is any PM instrument within 1 m of the instrument?	N/A
For high volume PM instruments, is any PM instrument within 2m of the instrument?	N/A
Unrestricted airflow (degrees)	360
Probe material for reactive gases (e.g. Pyrex,	Teflon

Local site name	Red Hills
stainless steel, Teflon)	
Residence time for reactive gases (seconds)	10.1
Will there be changes within the next 18 months?	No
Is it suitable for comparison against the annual PM2.5?	N/A
Frequency of flow rate verification for manual PM samplers	N/A
Frequency of flow rate verification for automated PM analyzers	N/A
Frequency of one-point QC check for gaseous instruments	daily
Date of 2014 Annual Performance Evaluation for gaseous parameters	03/11/2014
Dates of 2014 Semi-Annual Flow Rate Audits for PM monitors	N/A

Local site name	**Carrizo Plains**
AQS ID	06-079-8006
GPS coordinates (decimal degrees)	35.35474, -120.04013
Street Address	9640 Carrizo Highway (CA 58), California Valley
County	San Luis Obispo
Distance to roadways (meters)	38 to Carrizo Highway (CA 58)
Traffic count (AADT, year)	Carrizo Highway (CA 58): 350 (2013)
Groundcover (e.g. asphalt, dirt, sand)	Paved
Representative statistical area name (i.e. MSA, CBSA, other)	San Luis Obispo – Paso Robles (MSA)
Pollutant, POC	O_3, 1
Primary / QA Collocated / Other	N/A
Parameter code	44201
Basic monitoring objective(s)	NAAQS Comparison
Site type(s)	Regional Transport, General Background
Monitor type(s)	SLAMS
Network Affiliation	N/A
Instrument manufacturer and model	API 400A
Method code	087
FRM/FEM/ARM/other	FEM
Collecting Agency	SLOCAPCD
Analytical Lab (i.e. weigh lab, toxics lab, other)	N/A
Reporting Agency	SLOCAPCD
Spatial scale (e.g. micro, neighborhood)	Regional
Monitoring start date (MM/DD/YYYY)	01/01/2006
Current sampling frequency (e.g. 1:3, continuous)	continuous
Calculated sampling frequency (e.g. 1:3/1:1)	continuous
Sampling season (MM/DD-MM/DD)	01/01-12/31
Probe height (meters)	4.7
Distance from supporting structure (meters)	1.1
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	N/A
Distance to furnace or incinerator flue (meters)	N/A
Distance between monitors fulfilling a QA Collocation requirement (meters)	N/A
For low volume PM instruments, is any PM instrument within 1 m of the instrument?	N/A
For high volume PM instruments, is any PM instrument within 2m of the instrument?	N/A
Unrestricted airflow (degrees)	360
Probe material for reactive gases (e.g. Pyrex, stainless steel, Teflon)	Teflon
Residence time for reactive gases (seconds)	15.7

Local site name	**Carrizo Plains**
Will there be changes within the next 18 months?	No
Is it suitable for comparison against the annual PM2.5?	N/A
Frequency of flow rate verification for manual PM samplers	N/A
Frequency of flow rate verification for automated PM analyzers	N/A
Frequency of one-point QC check for gaseous instruments	daily
Date of 2014 Annual Performance Evaluation for gaseous parameters	03/11/2014
Dates of 2014 Semi-Annual Flow Rate Audits for PM monitors	N/A

Appendix D: EPA Approval Atascadero Site Move

This Appendix documents EPA's approval the relocation of the Atascadero SLAMS from 6005 Lewis Avenue to 5599 Traffic Way. Figure D-1 is the email from Karl Tupper (SLOCAPCD) to Dena Vallano (EPA Region 9) requesting approval of the new site. Figure D-2 is the reply email from Dena Vallano granting approval. Email addresses and phone numbers have been redacted in these figures. Figure D-3 depicts the PowerPoint presentation referred to in the emails; a larger format version is available from the District upon request.

From:
Sent: Monday, November 10, 2014 2:55 PM
To: Vallano, Dena
Cc:
Subject: RE: Preliminary Approval of Atascadero Site Relocation

Hi Dena,

The situation in Atascadero continues to evolve. We have previously discussed keeping the station at the Fire Department, but moving it much closer to the road. This is technically still an option, but I get the impression that the Fire Department would really prefer to have us out of there completely. And if we go with this option, we may end up having to move again in a couple years when the station is completely redone. And as noted in my previous emails, this proposed location only barely meets 40 CFR 58 App E requirements--in particular it is very close to the road and if traffic increases significantly then it will no longer meet siting criteria.
So the latest idea is to move the station to a city owned property about 2 tenths of a mile away. See the attached presentation. This gets us out of the fire station property and in a location with better accessibility and less of a chance of needing to move again soon. There are two separate fenced off areas within the city property--we currently have permission to move into one of those areas and we are waiting to get approval for the other. Either option is better than fire station in terms of distance from roadways and sources. The only potential issue with the new areas is that they are about 5 meters lower in elevation than the fire station.

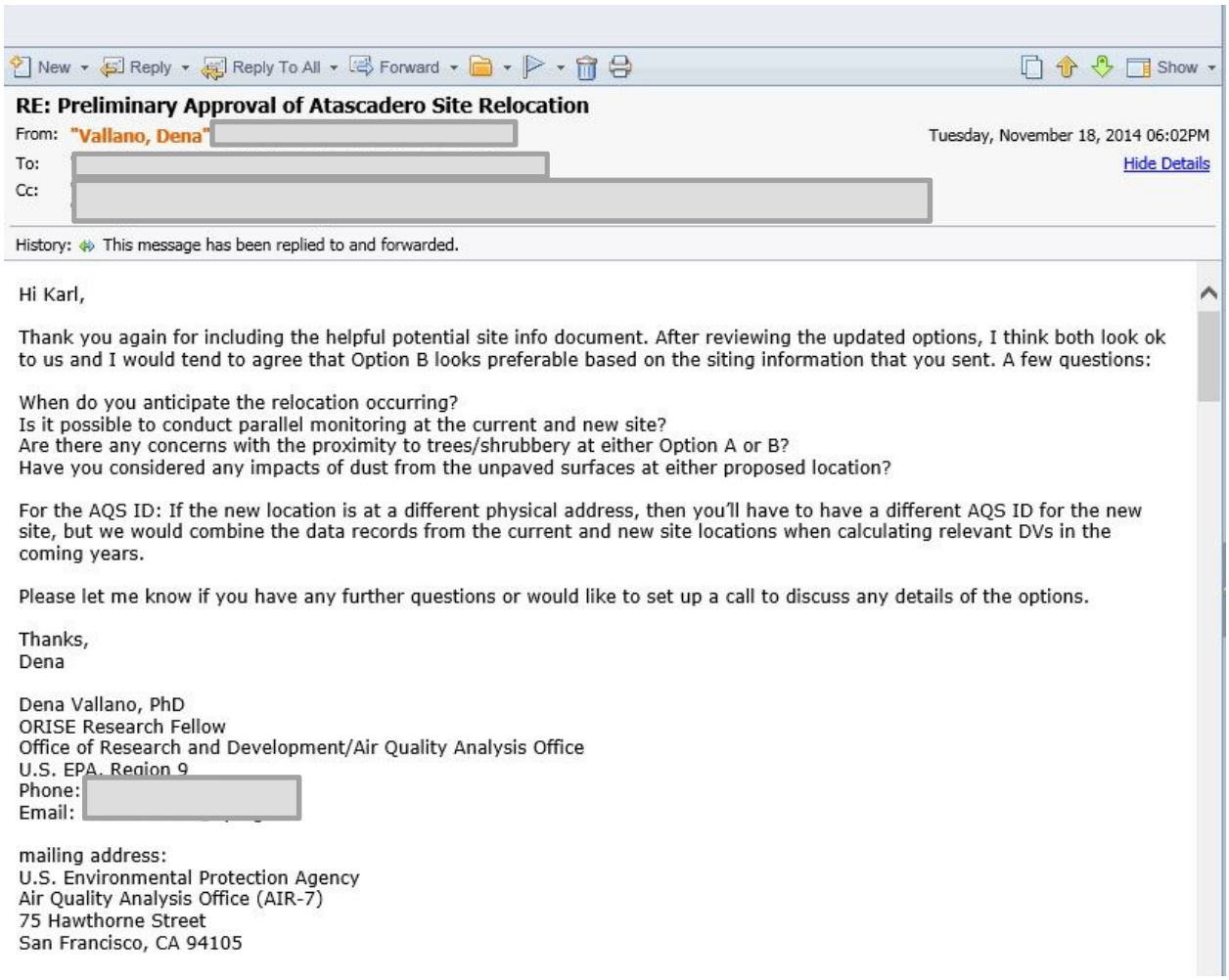
So we would like to move to this new property. Of the two locations at the new address, we believe either works in terms of 40 CFR 58 App E, but we prefer the one that we don't yet have approval for, mostly because it's a bit more accessible.

Please let me know what you think. We would prefer to keep the same AQS site ID, but even if this is not possible we'd still prefer to move this location.

Karl

Karl A Tupper
Air Quality Specialist, Monitoring
Air Pollution Control District
County of San Luis Obispo
ph: 8
email
web: www.slocleanair.org

Figure D-1: Email from Karl Tupper, SLOCAPCD, to Dena Vallano, EPA Region 9, requesting approval of new location for the Atascadero SLAMS.



New Reply Reply To All Forward Show

RE: Preliminary Approval of Atascadero Site Relocation

From: "Vallano, Dena" [redacted] Tuesday, November 18, 2014 06:02PM

To: [redacted] Hide Details

Cc: [redacted]

History: This message has been replied to and forwarded.

Hi Karl,

Thank you again for including the helpful potential site info document. After reviewing the updated options, I think both look ok to us and I would tend to agree that Option B looks preferable based on the siting information that you sent. A few questions:

When do you anticipate the relocation occurring?
Is it possible to conduct parallel monitoring at the current and new site?
Are there any concerns with the proximity to trees/shrubbery at either Option A or B?
Have you considered any impacts of dust from the unpaved surfaces at either proposed location?

For the AQS ID: If the new location is at a different physical address, then you'll have to have a different AQS ID for the new site, but we would combine the data records from the current and new site locations when calculating relevant DVs in the coming years.

Please let me know if you have any further questions or would like to set up a call to discuss any details of the options.

Thanks,
Dena

Dena Vallano, PhD
ORISE Research Fellow
Office of Research and Development/Air Quality Analysis Office
U.S. EPA, Region 9
Phone: [redacted]
Email: [redacted]

mailing address:
U.S. Environmental Protection Agency
Air Quality Analysis Office (AIR-7)
75 Hawthorne Street
San Francisco, CA 94105

Figure D-2: Reply email from Dena Vallano to Karl Tupper granting approval.

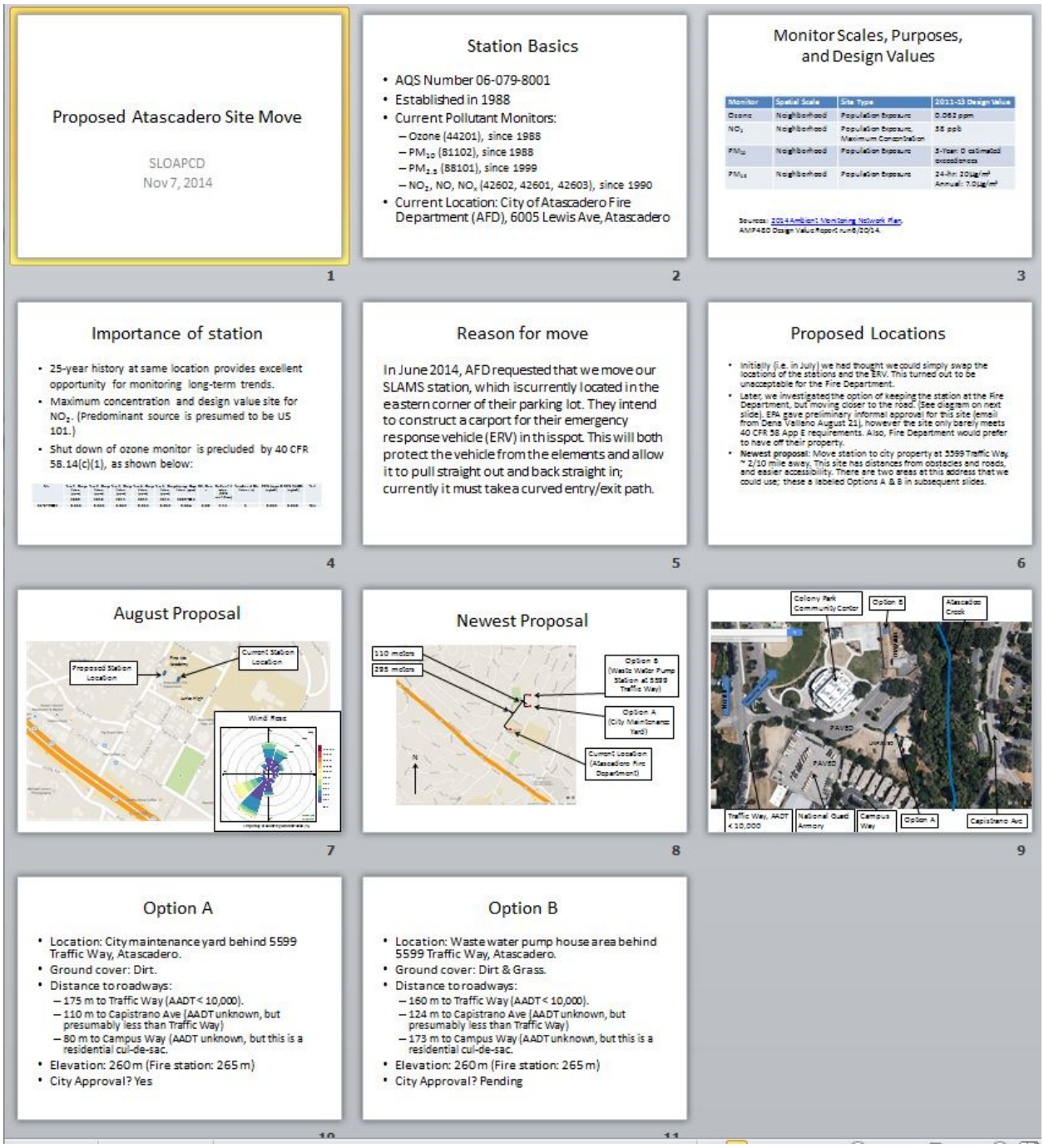


Figure D-3: PowerPoint presentation referred to in Figures D-1 and D-2.

Appendix E: Parallel Monitoring in Atascadero

Introduction

As noted earlier, in 2014 we were notified by the host of our Atascadero SLAMS that we needed to remove the station from their property (6005 Lewis Ave) in order to accommodate planned renovations and new construction. A potential new location was identified about 400 meters away at 5599 Traffic Way, and a limited period of parallel monitoring was conducted at the original and potential sites to assess their comparability; ultimately the proposed site was chosen as the new location for the Atascadero SLAMS. Due to the timing of obtaining the needed equipment, getting site access, and the need to vacate the original site, parallel monitoring could only be conducted for limited time, specifically December 18, 2014 to February 23, 2015. Furthermore, due to equipment limitations, only ozone and $PM_{2.5}$ could be monitored at the proposed site. All data collected at these sites is available upon request.

Methods

All instruments at the Lewis Ave site were housed within an insulated trailer; see the table in Appendix C for site 06-079-8001 for probe heights and other siting details. The trailer was equipped with a wall mounted air conditioning unit for climate control. Hourly room temperature was maintained between 20 and 30 ^{o}C for the duration of the collocation period. At the Traffic Way site, the equipment was housed within a temporary enclosure measuring approximately 140 cm tall by 70 cm wide and 70 cm deep. The $PM_{2.5}$ probe was approximately 2.5 m above the ground and the ozone probe was at about 3 m; their inlets were less than 1 m apart. The enclosure was fitted with a small heater and two cooling fans, each controlled by its own thermostat. Most of the time, hourly average room temperature was maintained between 20 and 30 ^{o}C, however 11 hours had average room temperatures between 30 and 33 ^{o}C and 226 hours had average room temperatures between 16 and 20 ^{o}C. No data was invalidated based on shelter temperature, since it was always within the operating range of the instruments.

At both locations ozone was monitored with Teledyne-API T400 photometric ozone analyzers. The Lewis Ave site monitor was operated in accordance with all QA/QC requirements in Appendix A of 40 CFR 58. Nightly zero/span/precision checks during the parallel monitoring period yielded zero responses between 0 and 1.2 ppb, and precision errors between -1.2 and +1.6%; precision checks were carried out at approximately 62 ppb. In contrast, calibration equipment was not available for the Traffic Way site, so nightly zero/span/precision checks could not be performed. An initial start-up and a final shut-down calibration check were performed in the SLOCAPCD lab, and both gave passing results, with zero responses of 0 (start-up) and 0.4 (shut-down) and precision errors of +0.1% (start-up) and +0.9% (shut-down). The precision point for these calibrations was approximately 50 ppb.

At both locations, $PM_{2.5}$ was monitored using MetOne BAM 1020 instruments. While the Lewis Ave monitor was run as an FEM operated in accordance with all Appendix A QA/QC requirements, the Traffic Way monitor employed an SCC rather than a VSCC as the $PM_{2.5}$ size selector. Bi-weekly QC

checks—consisting of leak checks, flow audits, temperature and pressure sensor checks, and time checks—were performed on both instruments, and both were subject to the same cleaning and preventative maintenance schedule. A 72-hr zero test was performed on the Traffic Way instrument prior to deployment.

Analysis

SLOCAPCD is not aware of any EPA requirements or guidelines for parallel monitoring; however ARB's Air Monitoring Technical Advisory Committee (AMTAC) published guidelines in 1997.[8] Our analysis of the data is therefore informed by the AMTAC guidelines.

Timing of Parallel Monitoring

AMTAC recommends a year of parallel monitoring or at least monitoring during the season of highest expected concentration. A full year was not practical in this situation, and data was instead collected from December 18 through February 23. This period coincides with the season of highest expected $PM_{2.5}$ concentration, which is December/January as shown below in Figure E-1. Unfortunately, ozone concentrations are typically at their lowest during this time of year, as shown in Figure E-2.

[8] Air Monitoring Technical Advisory Committee, "Site Relocation and Parallel Monitoring Guidelines," June 11, 1997.

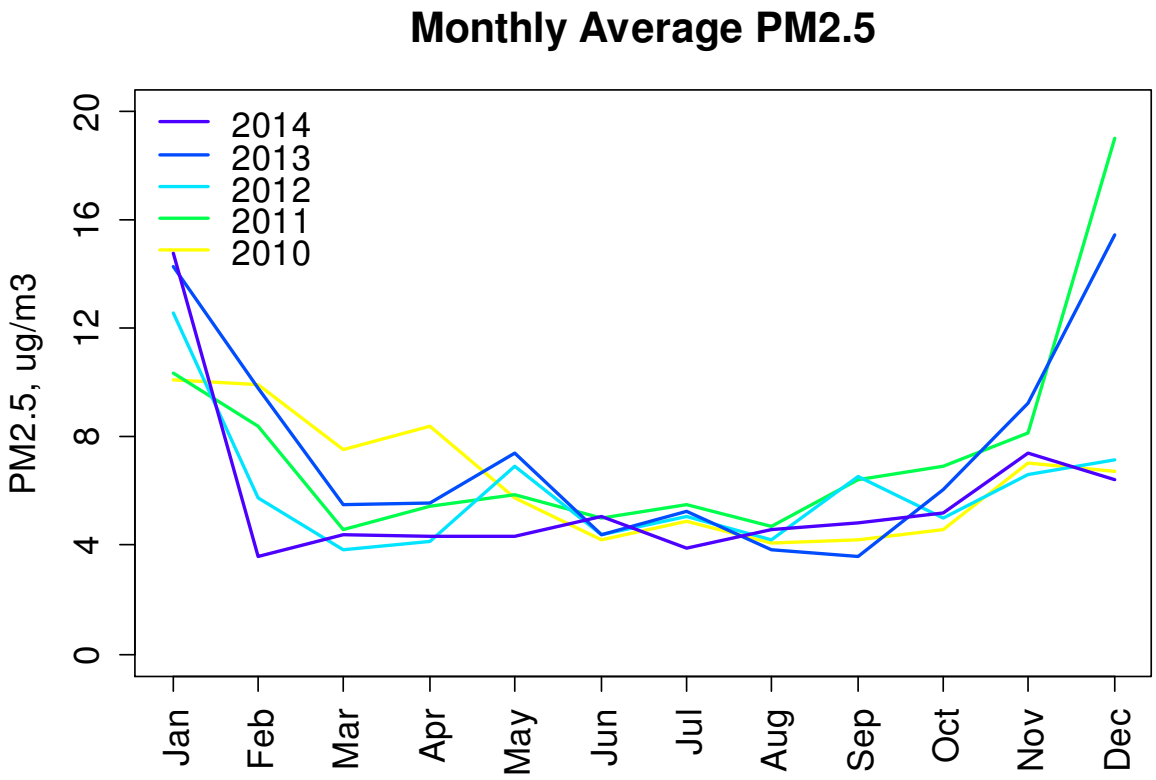


Figure E-1: Monthly Average $PM_{2.5}$ at Atascadero (Lewis Ave) as measured by BAM.

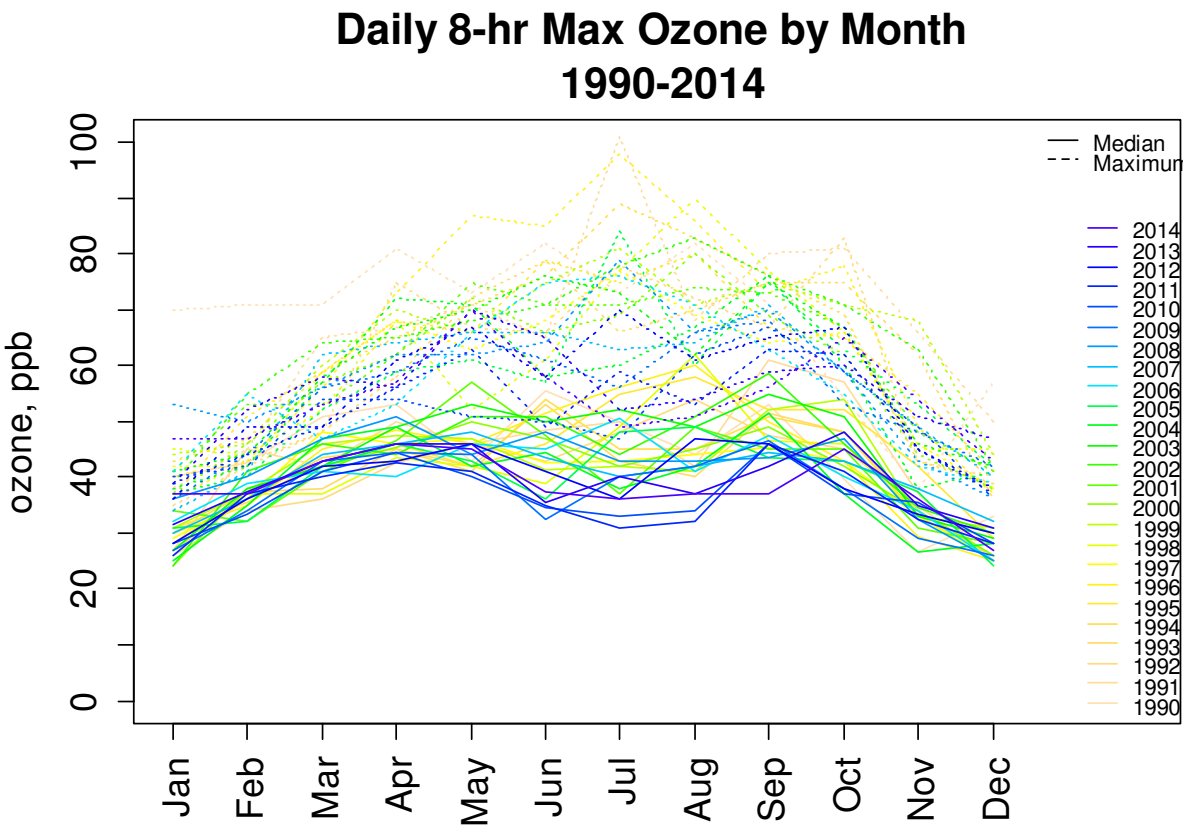


Figure E-2: Daily 8-hr Maximum Ozone by Month and Year at Atascadero (Lewis Ave). Solid lines connect the median values for each month; dotted lines connect the maximum values for each month.

$PM_{2.5}$ Analysis

The analysis of $PM_{2.5}$ was conducted using 24-hr averages. Only hours when both monitors had valid data were included in the averaging, and at least 18 valid hourly values were required for a 24-hr average to be valid. A scatterplot of these daily averages is shown in Figure E-3 along with the least squares fit. The R^2 of the least square fit is 0.95, suggesting that the relationship between the sites is linear. The slope and intercept are 1.011 (95% confidence interval: 0.956, 1.067) and -0.41 $\mu g/m^3$ (95% CI: -1.109, 0.271). Since the confidence interval of the slope contains 1 and that of intercept contains 0, the difference between the sites is not statistically significant.

The AMTAC guideline suggests performing a paired T-test to compare the values from the sites. This test essentially asks whether the average difference is significantly different from zero. For these data, the p-value of the test is 0.08 and 95% confidence interval for the difference in 24-hr averages between the sites is -0.04 to 0.62 g/m^3. This also suggests that there is not a statistically significant difference between the locations.

Finally, the 90% upper bound coefficient of variation (C.V.) between the two sites was calculated according to the formulae in section 4.4 of Appendix A to 40 CFR 58. Daily averages less than

3 µg/m^3 were excluded from the calculation. By this method, the C.V. is calculated to be 11%. SLOCAPCD considers this result to be evidence for comparability, given that the Appendix A goal for *collocated* monitors is 10% or less, and these monitors were not collocated, had different probe heights, and employed slightly different methods (VSCC vs SCC).

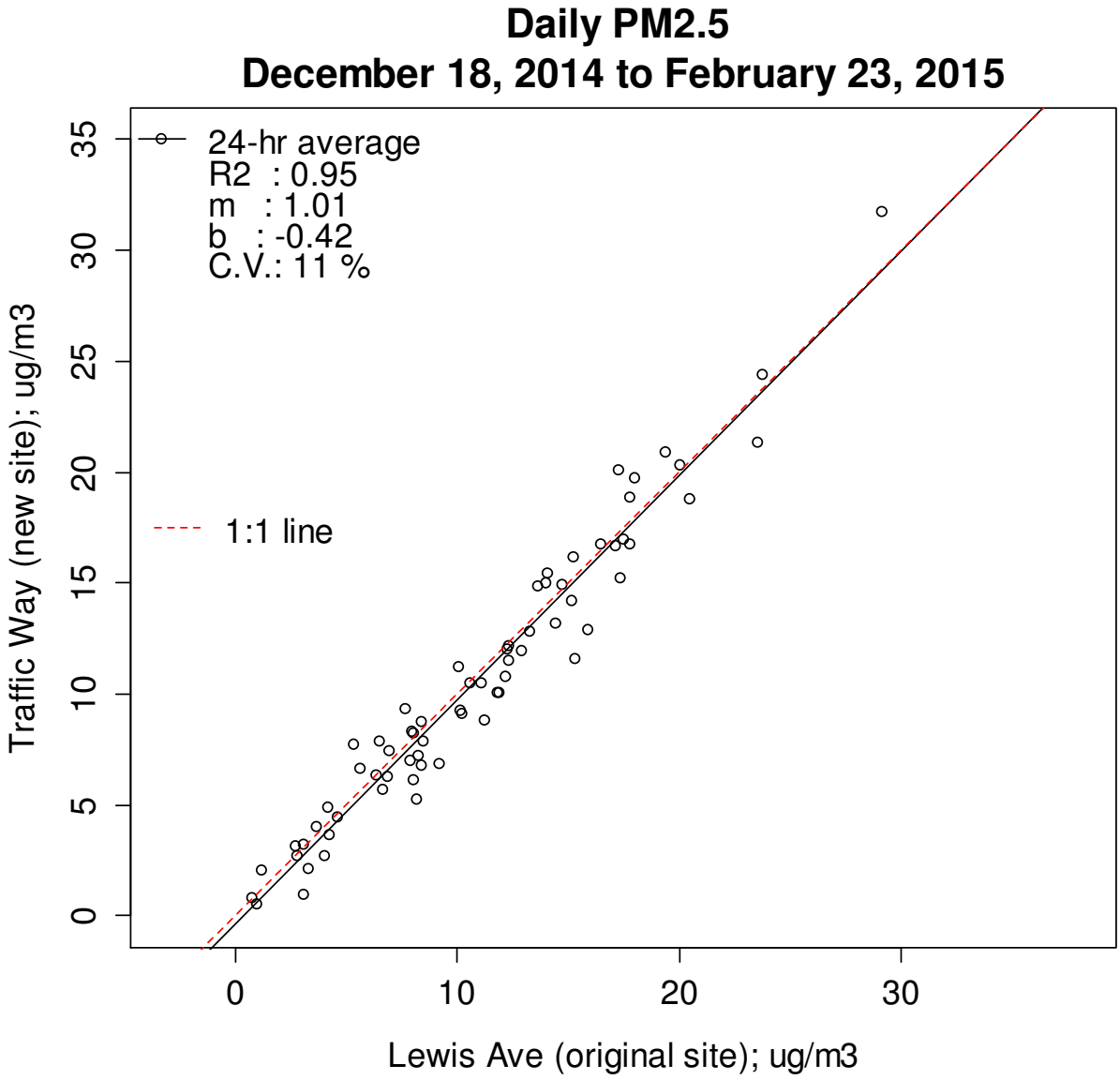


Figure E-3: Comparison of 24-hr $PM_{2.5}$ averages.

Ozone Analysis

The analysis of ozone was conducted using daily maximum 8-hr averages. Only hours in which both sites had valid data were allowed to be included in 8-hr averages. For an 8-hr average to be valid, it had to comprise six or more valid hourly values. The window of the daily maximum 8-hr average at one site was not required to correspond with the window at the other site.

A scatterplot of daily 8-hr maxima is shown in Figure E-4 along with the least squares fit. The R^2 of the least square fit is 0.99, indicating an excellent linear fit. The slope and intercept are 1.004 (95% CI: 0.979, 1.067) and -0.53 ppb (95% CI: -1.233, 0.170). Since the confidence interval of the slope contains 1 and that of intercept contains 0, the difference between the sites is not statistically significant.

Applying the T-test suggested by AMTAC results in a p-value of 1.13×10^{-6} and a 95% confidence interval for the difference in daily maxima of 0.27 to 0.59 ppb. This suggests that there is small but statistically significant difference between the locations, with the Traffic Way site measuring slightly lower values. This difference could easily be due to the slightly different instrument calibrations noted above. Applying the C.V. test yields a difference of 2%, which we interpret as evidence for comparability.

Finally, Figure E-5 depicts a typical "strip chart," comparing the ozone values recorded at each site minute by minute. The sites track each other closely, suggesting comparability.

Conclusion

$PM_{2.5}$ was monitored at both locations during the season that historically has had the highest concentrations. Various statistical tests were applied to the 24-hr averages from these sites, and none indicated a statistically significant difference. The upper bound coefficient of variation between the monitors was only slightly higher than the data quality objective for collocated monitors; however these monitors were not collocated. In summary, the data, while limited, suggest that there is not a significant difference in the $PM_{2.5}$ levels measured at these sites.

Ozone was also monitored at these locations, but it was monitored during the time of year that historically has been the low season. Statistical tests comparing the daily 8-hr maxima from these sites found either no significant difference or only a very small—less than 1 ppb—difference between the locations. This small difference is likely due to differences in instrument calibration. In summary, these limited data suggest that ozone measurements at these locations are representative of the same area.

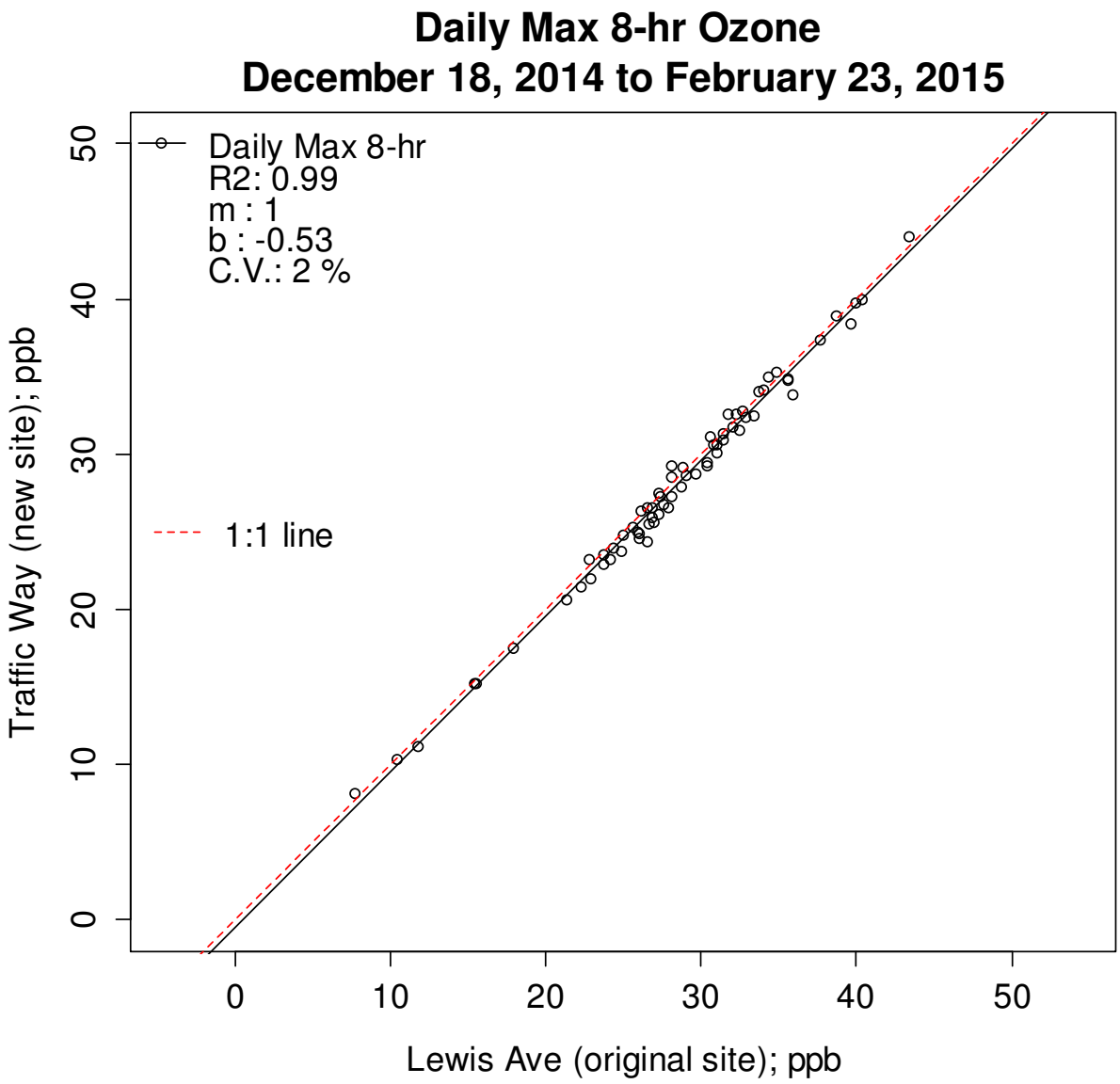


Figure E-4: Comparison of Daily Maximum 8-hr Averages.

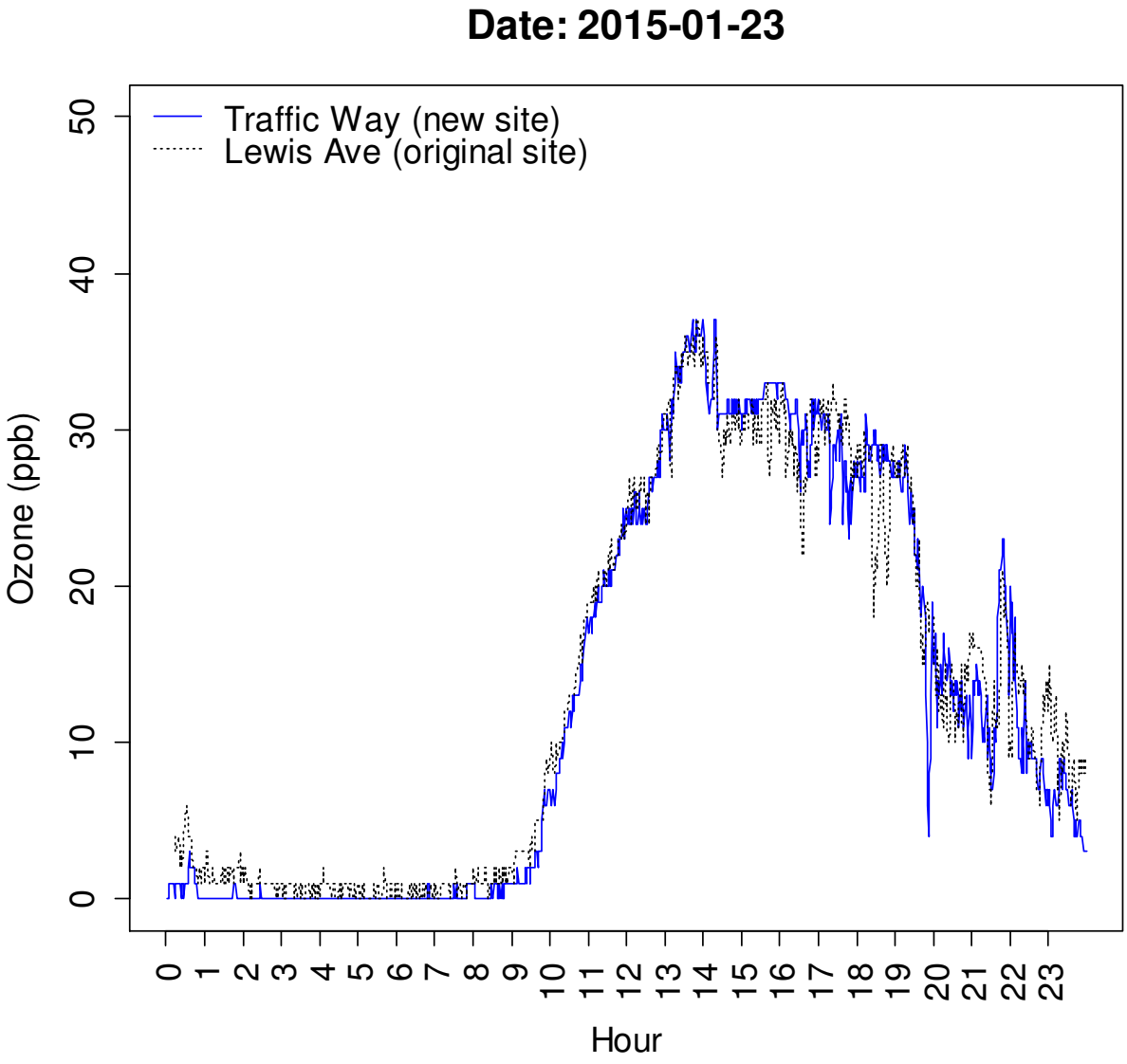


Figure E-5: A typical strip chart, comparing ozone values at the two sites at 1-minute resolution.

Appendix F: Index to Items in Annual Monitoring Plan Checklist

This appendix is intended to provide a convenient guide for where to find the content specifically required by EPA Region 9's Annual Monitoring Plan Checklist for 2015. The item numbers correspond to those on the checklist.

Item No.	Section, page	Notes
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5	Appendix D.	
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7	Proposed Network Changes…, p. 16.	
8	Proposed Network Changes…, p. 16.	
9	Nitrogen Dioxide Monitoring…, p. 13.	
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11	Air Quality Data, p. 18.	
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13	N/A	
14	SLAMS Air Monitoring…, p 7.	
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17	Appendix C	
18	Appendix C	
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20	N/A	
21	Appendix A, p. 20.	
22	Appendix A, p. 20.	
23	Appendix B, p. 24.	
24	N/A	
25	Appendix C, pp. 25-45.	
26	Particular Monitoring…, pp. 14-15.	
27	Particular Monitoring…, pp. 14-15; Appendix C, pp. 32-33.	
28	Proposed Network Changes…, p. 16.	
29	N/A	
30	N/A	
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32	N/A	
33	Appendix C, pp. 25-45.	

34	Appendix C, pp. 25-45.	
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35	Appendix A, p. 21.	
36	N/A	
37	Appendix C.	
38	N/A	
39	Appendix C.	
40	Appendix C.	
Pb-Specific Monitoring Requirements		
41	Appendix A, p. 23.	
42	Appendix A, p. 23.	
43	N/A	
44	N/A	
45	N/A	
46	N/A	
47	N/A	
48	N/A	
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49	Appendix C.	
50	Appendix C.	
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51	Appendix A, p. 19.	
52	Table 2, p.7; Ozone Monitoring..., pp. 11-12. Appendix C.	
53	Appendix C.	
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54	Proposed Network Changes..., p. 16.	
55	Proposed Network Changes..., p. 16.	
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60	Appendix A, p. 22.	
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61	N/A	
Site or Monitor - Specific Requirements		
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