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Annual Network Plan for Ambient Air Monitoring

Imperial County Air Pollution Control District

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Table of Contents

		Page
I	Introduction.....	5
II	Network Overview	7
	A Air Monitoring Network Design – Monitoring Objectives	7
	B Air Monitoring Network Monitors - Spatial Scales	9
III	Monitoring Requirements	10
	A Ozone (O ₃).....	11
	B Carbon Monoxide (CO).....	12
	C Nitrogen Dioxide (NO ₂)	13
	D Sulfur Dioxide (SO ₂).....	14
	E Particulate Matter (PM ₁₀)	14
	F Particulate Matter (PM _{2.5}).....	16
	Spatial Averaging Approaches for PM _{2.5}	17
IV	Proposed Modifications to the Network Design	17
	Calexico East.....	17
	Calexico Ethel.....	17
V	Quality System Requirements	18
	A Quality Management Plans (QMP) and Quality Assurance Project Plan (QAPP)	18
	B Data Review and Submittal.....	18
VI	Overall Summary of the Imperial County Ambient Air Monitoring Network	19
VII	Detailed Site Information	21
	Niland Station	21
	Westmorland Station	25
	Brawley Station.....	29
	El Centro Station	33
	Calexico Ethel Station	37
	Appendix A Regulatory Language of 40 CFR §58.10	42
	Glossary of Acronyms	45

List of Figures

		Page
Figure 1	Map of Ambient Air Monitoring Stations in Imperial County.....	6
Figure 2.	Map of Niland Monitoring Stations	22
Figure 3.	Map of Westmorland Monitoring Station	26
Figure 4.	Map of Brawley Monitoring Station	30
Figure 5.	Map of El Centro Monitoring Station	34
Figure 6.	Map of Calexico Ethel Monitoring Station	38

List of Tables

		Page
Table 1	Relationship Among Site Types and Scales of Representativeness	10
Table 2	SLAMS Minimum O ₃ Monitoring Requirements	12
Table 3	Summary of Minimum Monitoring Requirements for Ozone for Imperial County	12
Table 4	Summary of Minimum Monitoring Requirements for Carbon Monoxide.	13
Table 5	Summary of Minimum Monitoring Requirements for Nitrogen Dioxide	14
Table 6	Summary of Minimum Monitoring Requirements for Sulfur Dioxide for Imperial County	14
Table 7	PM ₁₀ Minimum Required Monitors per Concentration Level ...	15
Table 8	Summary for Minimum Monitoring Requirements for Particulate Matter (PM ₁₀) for Imperial County	16
Table 9	PM _{2.5} Minimum Monitoring Requirements.....	16
Table 10	Summary for Minimum Monitoring Requirements for Particulate Matter (PM _{2.5})	17
Table 11	Ambient Air Quality Monitoring Site Locations Imperial County.....	19
Table 12	Pollutants and Parameter Monitored Per Site.....	19
Table 13	Summary of Spatial Scale and Monitoring Objectives	20

I INTRODUCTION

According to Title 40 of the Code of Federal Regulations (CFR) Part 58.10 (40 CFR 58.10), states and where applicable local agencies are required to adopt and submit to the Regional Administrator of the United States Environmental Protection Agency (US EPA) an annual monitoring network plan (Network Plan) which establishes and maintains an air quality surveillance system. By regulation an air quality surveillance system is composed of monitoring stations equipped with either, or a combination of Federal Reference Method (FRM), Federal Equivalent Method (FEM) or Approved Regional Method (ARM) monitors. These monitors measure ambient levels of gaseous and particulate (solid and liquid aerosol) air pollutants.

Depending on the purpose and air quality designation of an area the monitoring station may be one of many different types of stations.¹ Here in Imperial County all monitoring stations are designated as state or local air monitoring stations (SLAMS). Per CFR all SLAMS networks are ambient air quality monitoring sites that are primarily needed for National Ambient Air Quality Standards (NAAQS) comparisons. SLAMS exclude special purpose monitor (SPM) stations but include national core multipollutant monitoring stations (NCore), photochemical assessment monitoring stations (PAMS) and all other State or locally operated stations that have not been designated as SPM stations. Currently, no NCore or PAMS are located in Imperial County.

In addition 40 CFR Part 58 requires the identification of one and only one Primary Quality Assurance Organization (PQAO) for each criteria pollutant sampler/monitor within a monitoring station. Currently, the identified PQAO for Imperial County is the California Air Resources Board (CARB). While the Imperial County Air Pollution Control District (Air District) handles all the day to day operations for each criteria pollutant sampler/monitor the PQAO is the monitoring organization that is responsible for pooled data quality assessments.

The Network Plan, as mentioned above, is required by federal regulation. It requires the Air District to identify the purpose of each monitor within the SLAMS network and it requires evidence that the siting and operation of each monitor meets the requirements of appendices A, C, D and E of 40 CFR Part 58. Overall, this Network Plan provides the results of the annual review of all the air monitoring stations in Imperial County. The Network Plan includes slight changes that identify where the Network Plan meets specific code requirements and it includes a discussion of relevant changes to monitoring requirements that affect the SLAMS network in Imperial County.

Below is a reference map, Figure 1, which depicts the current location of each monitoring station in Imperial County.

¹ Code of Federal Regulations, Title 40 Part 58.10

Figure 1
Ambient Air Monitoring Stations in Imperial County



*Calexico-East was closed in 2010

II NETWORK OVERVIEW

A Air Monitoring Network Design – Monitoring Objectives

The SLAMS network for Imperial County includes a total of five monitoring stations located within the urban areas of Niland, Westmorland, Brawley, El Centro and Calexico. The Air District operates four of the monitoring stations while the CARB operates the monitoring station in Calexico. All data and information concerning the Calexico monitoring station was obtained from CARB and is accurate to the best of our knowledge.

As mentioned in the introduction, the primary goal of a SLAMS monitoring network is comparison to the NAAQS. The NAAQS is established by US EPA to protect the public health and the environment. There are two types of NAAQS that an Air District must consider; the primary standard which provides for the protection of the public health and the secondary standard which provides for protection of the public welfare which includes protection against decreased visibility and damage to animals, crops, vegetation and buildings. Therefore, all SLAMS in Imperial County have been established to monitor very specific pollutants. The pollutants monitored include but are not limited to, Carbon Monoxide (CO), Particulate Matter of less than 2.5 microns (PM_{2.5}), Particulate Matter of less than 10 microns (PM₁₀), Nitrogen Dioxide (NO₂), Ozone (O₃) and meteorology. In order to respond effectively to noncompliance issues with the NAQQS all data arising from the network must abide by all applicable quality assurance requirements (40 CFR Part 58 Appendix A), ambient air quality monitoring methodology (40 CFR Part 58 Appendix C), network design criteria (40 CFR Part 58 Appendix D) and must meet all applicable monitoring probe and path siting criteria (40 CFR Part 58 Appendix E). This allows for the not only for the proper management of quality assured monitoring information but assurance that the data is produced in a systematic and organized way.

The intent of any air monitoring network should be to meet well defined needs, uses and purpose. In order to accomplish this, 40 CFR Part 58 requires all monitoring networks to be designed in such a way as to meet three basic monitoring objectives:

1. Provide air pollution data to the general public in a timely manner.

The Air District uses it's PQAQO, CARB, as the primary data provider to the public. The CARB provides both "raw" or real time data and verified data for several local air districts throughout California including Imperial County. Both real time and verified data are accessible to the general public, industry, and any other organization through the CARB website. For "raw" or real time data visit the Air Quality and Meteorological Information System (AQMIS) page at <http://www.arb.ca.gov/aqmis2/aqmis2.php>. For verified data visit CARB's Air Quality Data Statistic's (iADAM) page at <http://www.arb.ca.gov/adam/index.html>.

In addition, to these two sources of public access to air monitoring data, the Air District also provides real time data on all monitored pollutants of concern, seasonal ozone forecasts and summaries via the Imperial Valley Air web page at www.imperialvalleyair.org. The Imperial Valley Air webpage also supports independent school program advisories utilized by local schools to help minimize impacts to students during unusually high particulate days. As a follow up, the Air District also utilizes its existing webpage for public advisories, such as but not limited to Wind Advisories.

2. Support compliance with ambient air quality standards and emission strategy development.

Currently, all SLAMS data is utilized in the development of attainment and maintenance plans. The Air District, along with the CARB, continually reviews existing data for trends, peaks and seasonal variations that allow for proper regional air quality modeling. Regional air Quality modeling is used to develop emissions strategies and to identify the impact of control measures, either as improving air quality or as an identification of where improvement is needed.

On August 11, 2009 the Imperial County Board of Directors adopted the 2009 PM₁₀ State Implementation Plan (SIP) and on July 13, 2010 the same board adopted the 2009 8-Hour Ozone Air Quality Management Plan. The newest SIP develop is that of the PM_{2.5} SIP which is scheduled for completion by December of 2012.

3. Support for air pollution research studies.

The CARB is the lead agency for working on research studies related to health effect assessments, atmospheric processes and for monitoring methods development. Because the CARB is the PQAQO for Imperial County all air pollution research studies are overseen and managed through CARB. CARB issues its "State and Local Air Monitoring Network Plan" which covers the monitoring networks throughout the state. In addition, the CARB maintains a comprehensive webpage, with information concerning the "Air Quality Monitoring Network" activities, studies, and research conducted for the entire state. <http://www.arb.ca.gov/aqd/aqmoninca.htm>

In order to support the three basic monitoring objects the Air District has strived to establish and maintain sites that can inform managers about peak air pollution levels, typical levels in populated areas, transport either basin wide or internationally, and source specific air pollution levels. Crucial to this analysis, is the relationship between the monitoring objective, site type and the geographic location of the monitoring site. The Air District analyzed all the monitoring sites to identify if the site classifies as either a highest concentration site, typical concentration site, a general background concentration site, a regional transport site (includes international transport), a site to determine the impact of significant sources or source categories or a site which measures impacts to visibility, vegetation damage, or other welfare based impact.

B Air Monitoring Network Monitors – Spatial Scales

Properly classifying a monitor, that is identifying the monitor's particular monitoring objective, allows for the proper interpretation of monitoring data. The relationship between the monitoring objective, site type and the geographic location is understood or interpreted by the spatial scale of representativeness. Once the spatial scale of representativeness is understood then proper siting is achieved as well as proper interpretation of monitoring data. In some cases, the physical location of a monitor is determined by considering the affect of identified emission patterns and not the spatial scale of representativeness. In these situations the spatial scale of representativeness is a result of the site location.

In order to understand the spatial scale of representativeness, proper consideration must be given to the monitoring site type, the air pollutant measured and the monitoring objective. The spatial scale is described in the CFR as "...the physical dimensions of the air parcel nearest to a monitoring site throughout which actual pollutant concentrations are reasonably similar."² Listed below are the general spatial scales identified as the most appropriate for the monitoring site types. Depending on the monitored pollutant the description may change slightly because of the behavior of the pollutant. Nonetheless, generally the spatial scales are as follows:

- **Microscale** – Defines the concentrations in air volumes associated with area dimensions ranging from several meters up to about 100 meters.
- **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.
- **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 kilometer range. The neighborhood and urban scales have the potential to overlap in applications that concern secondarily formed or homogeneously distributed air pollutants.
- **Urban Scale** – Defines concentrations within an area of city-like dimensions, on the order of 4 to 50 kilometers. Within a city, the geographic placement of sources may result in there being no single site that can be said to represent air quality on an urban scale.
- **Regional Scale** – Defines usually a rural area of reasonably homogeneous geography without large sources, and extends from tens to hundreds of kilometers.

² Code of Federal Regulation Appendix D to Part 58 – Network Design Criteria for Ambient Air Quality Monitoring, section 1.2 Spatial Scales, subsection (b).

- National and global scales – These measurement scales represent concentrations characterizing the nation and the globe as a whole. (There are no National or global scales monitoring stations in Imperial County.)

TABLE 1

RELATIONSHIP AMONG SITE TYPES AND SCALES OF REPRESENTATIVENESS

SITE TYPE	APPROPRIATE SITING SCALES
1 Highest Concentration	Micro, middle, neighborhood and sometimes urban or regional for secondarily formed pollutants
2 Population Oriented	Neighborhood, urban
3 Source Impact	Micro, middle, neighborhood
4 General/Background & regional transport	Urban, regional
5 Welfare-related Impacts	Urban, regional

III MONITORING REQUIREMENTS

As mentioned above, the intent of any air monitoring network should be to meet well defined needs, uses and purpose. A properly established monitoring station should target the key data collection need identified by the monitoring objective and spatial scale of the site. Nationally, there are several different types of monitoring stations varying in technical sophistication. Locally, all monitoring stations in Imperial County are SLAMS. These monitoring sites are intended to address compliance with the NAAQS therefore the sites are oriented to very specific air quality monitoring. The pollutants of interest here in Imperial County are as follows: Niland, Westmorland, El Centro and Calexico all monitor for O₃ and PM₁₀. Brawley, El Centro, and Calexico all monitor for PM_{2.5} and both El Centro and Calexico monitor CO and NO₂. All stations monitor for supporting meteorological parameters. See section VI Overall Summary of the Imperial County Ambient Air Monitoring Network for listed tables. As mentioned before, there are no NCore or PAMS located in Imperial County. Because there are no NCore stations there is no coarse particulate matter (PM_{10-2.5}) monitoring. In addition, the Imperial County airport does not emit 1 or more tons of lead (Pb) per year nor are there any non-airport Pb sources which emit 0.5 or more tons per year. As such, no specific ambient air Pb monitoring has been identified within the Imperial County air monitoring network.

Another factor when examining a monitoring network is whether the number of established monitors is enough to meet the network overall objective. Federal regulation requires a minimum number of monitors per pollutant and grants discretionary authority to the Regional Administrator, under certain conditions, to require additional monitors above and beyond that required by the minimum standards. To determine the total minimum number of required monitors specific consideration is given

to the pollutant of interest, purpose and population. To address population the CFR utilizes a statistical-based definition of a metropolitan area provided by the Office of Management and Budget and the Census Bureau. Pertinent to Imperial County is the metropolitan statistical area (MSA) which has been defined as a Core Based Statistical Area (CBSA) associated with at least one urbanized area with a population of 50,000 or more. Imperial County is part of the EI Centro MSA, referenced as 20940. It covers the major cities in our county and has a population count of 174,528 (2010 U.S. Census Bureau information).

Overall, Imperial County meets or exceeds US EPA's minimum requirements. Depending on the monitoring objective state and local agencies will operate more monitors than are required by law. The additional monitors are needed to fulfill state and local purposes for monitoring that are in addition to federal purposes. California air quality standards are more stringent than federal standards and require more ambient air monitoring to show compliance with the state standards. Monitors are also used to keep the public informed of the actual air quality conditions where they live and work.

For O₃, PM_{2.5} and PM₁₀, the required minimum number of monitoring sites is based on area size (in terms of population and geographic characteristics) and typical peak concentrations, either below or near the NAAQS. For other pollutants, no monitoring is required unless an area exceeds or is close to exceeding a NAAQS.

A Ozone (O₃)

Currently, under federal regulation there are two Ozone NAAQS to be met. Imperial County is classified by US EPA as a "moderate" non-attainment area for the 1997 8-hour ozone standard. Although the US EPA determined, on December 3, 2009, that the Imperial County "moderate" 8-hour ozone non-attainment area attained the 1997 8-hour standard no re-designation request has been filed by the Air District thus the "moderate" non-attainment classification is still binding. For the new 8-hour ozone standard Imperial County has been classified as a "marginal" non-attainment area. Currently, the Air District is still reviewing all data for pertinent attainment re-classification.

Imperial County has 4 ozone monitors which meet the requirements of US EPA. Monitoring for O₃ in Imperial County is year round with forecasting capabilities during the "ozone season". For the three year period 2009-2011 EI Centro recorded the highest concentration among all sites within the monitoring network. EI Centro's 8 hour design value is 0.081ppm. Although EI Centro is considered the highest concentrations site all sites are used to keep the public informed of air quality utilizing the Air Quality Index (AQI) reporting framework and air quality mapping.

**TABLE 2
SLAMS MINIMUM O₃ MONITORING REQUIREMENTS**

MSA POPULATION	MOST RECENT 3-YEAR DESIGN VALUE CONCENTRATION ≥85% OF ANY O₃ NAAQS	MOST RECENT 3-YEAR DESIGN VALUE CONCENTRATIONS <85% OF ANY O₃ NAAQS
> 10 million	4	2
4-10 million	3	1
350,000-<4 million	2	1
50,000-<350,000	1	0

In designing an O₃ monitoring network, in addition to the information above, there are additional factors such as geographic size, population density, complexity of terrain, meteorology and air pollution transport to consider. The scale of representativeness for O₃ monitoring would not occur under small scale but rather large volumes of air. Therefore, neighborhood, urban and regional spatial scales would be appropriate for O₃. Data trends seem to indicate that both the Calexico and El Centro monitors meet the neighborhood spatial scale while the Niland and Westmorland monitor meet the Regional spatial scale. Data indicates that both the Calexico and El Centro monitors are primarily but not solely measuring both regional and urban mixing and transport. While the Niland and Westmorland monitors typically measure transported O₃.

**TABLE 3
Summary of Minimum Monitoring Requirements for Ozone for Imperial County**

MSA	County	Population (year 2010)	8-hr design value (years)	Min # of monitors required	Number of active monitors	Monitors needed
20940 El Centro	Imperial	174,528	0.080 ppm 2009 2011	1	4	0

B Carbon Monoxide (CO)

Population density is the significant trigger for CO monitoring. High population densities of 1 million and above trigger the requirement of a single CO monitor along with a near-road NO₂ monitor. Imperial County does not meet the population requirement under the CFR for required CO monitoring. However, continued operation of existing SLAMS CO sites using FRM or FEM is required until discontinuation is approved by the US EPA Regional Administrator. There are two SLAMS CO monitors operating within the Imperial County monitoring network. Because CO is primarily occurring in areas near major roadways and intersections with high traffic density both the El Centro and

Calexico monitors fit the middle scale classification, however, the Calexico Ethel monitor may also fit the Neighborhood scale as the closes roadway emissions are international. This assessment requires further evaluation and is a deviation from prior review. For 2011, the maximum 1-hour CO concentration for El Centro was 36.0ppm, and for Calexico Ethel 7.7ppm.

TABLE 4
Summary of Minimum Monitoring Requirements for Carbon Monoxide for Imperial County

MSA	County	Population (year 2010)	8-hr design value (years)	Min # of monitors required	Number of active monitors	Monitors needed
20940 El Centro	Imperial	174,528	7.4 ppm 2004-2007	0	2	0

C Nitrogen Dioxide (NO₂)

Regulation requires the establishment of one microscale near-road NO₂ monitoring station within CBSA's with a population of 500,000 or more. Regulation further requires that there be one NO₂ monitoring station within CBSA's with a population of 1,000,000 or more. The Imperial County does not meet either requirement. Nevertheless, continued operation of existing SLAMS NO₂ sites is required until discontinuation is approved by the US EPA Regional Administrator. There are two SLAMS NO₂ monitors operating within the Imperial County monitoring network. Both the El Centro and Calexico monitors most closely fit the neighborhood spatial scale as the sites are located away from immediate NO₂ sources and as such are representative of typical air quality in the area and therefore suitable for population exposure. The Calexico monitor however also may help provide transport impact information for trend analysis. This is because the monitor is approximately 2.5 miles away from a major international port of entry, where high volumes of mobile source emissions are present. However, unlike a major roadway the majority of the mobile sources are idling for significant periods of time and little to no heavy duty vehicles are present. The highest concentration site is the Calexico Ethel site with an 8 hour design value of 64ppb (2009 2011data). For 2011 the maximum 1-hr concentration of 130 ppb was recorded at the Calexico Ethel monitoring station.

TABLE 5
Summary of Minimum Monitoring Requirements for Nitrogen Dioxide for Imperial County

MSA	County	Population (year 2010)	8-hr design value (years)	Min # of monitors required	Number of active monitors	Monitors needed
20940 El Centro	Imperial	174,528	64 ppb 2009 2011	0	2	0

D Sulfur Dioxide (SO₂)

Regulation requires States for each CBSA to calculate the Population Weighted Emissions Index (PWEI) in millions persons-tons per year of SO₂. Thresholds for the SO₂ monitoring requirements begin at a PWEI of 1,000,000 down to 5,000. At a PWEI equal to or greater than 5,000 but less than 100,000 a minimum of one SO₂ monitor is required. At a PWEI equal to or greater than 100,000 but less than 1,000,000 a minimum of two SO₂ monitors are required. The only SO₂ monitor operating within the Imperial County is located in Calexico. The most appropriate spatial scale for the SO₂ monitor in Calexico is the neighborhood spatial scale. The Calexico monitor is located away from stationary point and area sources of SO₂ and is representative of typical air quality therefore suitable for population exposure and trend analysis. For 2011, the maximum concentration for Calexico Ethel for 1-hr was 9.0 ppb the 8 hr design value is 8 ppb (2009-2011). PEWI calculated using 2008 emission inventory data for Sulfur Oxide (SO_x) result in a value of 0.07 million persons-tons/yr.

TABLE 6
Summary of Minimum Monitoring Requirements for Sulfur Dioxide for Imperial County

MSA	County	Population (year 2010)	Min # of monitors required	Number of active monitors	Monitors needed
20940 El Centro	Imperial	174,528	1	1	0

E Particulate Matter (PM₁₀)

According to regulation the number of PM₁₀ stations must range between 2 and 10 stations in areas where MSA populations exceed 1,000,000. Low population urban areas are not required to have more than two (2) PM₁₀ stations. Regulation further assesses the minimum monitoring requirement for PM₁₀ according to levels of concentration. For those areas with a MSA population equal to or less than 250,000 but greater than 100,000 the minimum required number of PM₁₀ monitors is summarized

below.

**TABLE 7
PM₁₀ MINIMUM REQUIRED MONITORS PER
CONCENTRATION LEVEL**

HIGH CONCENTRATION	MEDIUM CONCENTRATION	LOW CONCENTRATION
1-2	0-1	0

High concentration areas are those areas in which the ambient PM₁₀ concentrations exceed the PM₁₀ NAAQS by 20 percent or more. Medium concentration areas are those where ambient PM₁₀ concentrations exceed 80% percent of the PM₁₀ NAAQS. (That is 80% of 150µ/m³). Low concentration areas are those areas where ambient PM₁₀ concentrations are less than 80% of the PM₁₀ NAAQS. It is unclear whether a single data concentration 20% above the PM₁₀ NAAQS would trigger the ranking of a monitoring site as a high concentration or conversely as a medium or low concentration site. The majority of the PM₁₀ data concentrations recorded for 2009, 2010 and 2011 fall under the Low concentration ranking. Utilizing the assumption that a single data concentration triggers the ranking the breakdown per year is; 2009 high concentration year, 2010 a low concentration year and 2011 a high concentration year. Because each area has its own unique sources of pollutants and controls the number of stations is ultimately determined jointly by US EPA and the State.

In Imperial County size selective inlet high volume samplers are operated at 5 sites Niland, Westmorland, Brawley, El Centro, and Calexico. Three of the monitors for PM₁₀ sampling in Imperial County can be categorized as neighborhood scale, while two can be categorized as middle scale. Both the particulate matter concentrations and the land use and land surface characteristics can be said to be homogeneous among all the monitoring stations albeit in their own unique way. The Brawley, El Centro and Calexico monitors can be said to represent conditions where people commonly live and work for extended periods and provide comparisons between cities. The Niland and Westmorland monitors help provide short-term exposure to public health effects as these monitors tend to provide PM₁₀ emissions on outlying rural areas. Together, these samplers provide the Air District managers with information about trends and are primarily used for compliance with the NAAQS.

In addition to the high volume samplers two PM₁₀ continuous analyzers are operated in Niland and Brawley. These real-time devices are capable of making hourly particulate concentration measurements. These analyzers are utilized primarily for research and public advisory purposes. Imperial County is classified by US EPA as a “serious” non-attainment area for PM₁₀. All PM₁₀ monitors operate on a one in six day schedule. On annual average, Brawley and Calexico record the highest concentrations within the monitoring network. Calexico’s annual measurement is 40.5µ/m³ while Brawley’s annual measurement is 37.4µ/m³.

TABLE 8

Summary for Minimum Monitoring Requirements for Particulate Matter (PM₁₀) for Imperial County

MSA	County	Population (year 2010)	Min # of monitors required	Number of active monitors	Monitors needed
20940 El Centro	Imperial	174,528	2	5	0

F Particulate Matter (PM_{2.5})

Federal regulation requires that all State, and where applicable, local agencies operate the minimum number of required PM_{2.5} monitoring sites. The minimum required PM_{2.5} monitoring sites is determined by MSA population and the most recent 3-year design value. See Table 9 for a summary below.

TABLE 9

PM_{2.5} MINIMUM MONITORING REQUIREMENTS

MSA POPULATION	MOST RECENT 3-YEAR DESIGN VALUE	MOST RECENT 3-YEAR DESIGN VALUE
	CONCENTRATION ≥85% OF ANY PM _{2.5} NAAQS	CONCENTRATIONS <85% OF ANY PM _{2.5} NAAQS
> 1 million	3	2
500,000 - 1 million	2	1
50,000 - <500,000	1	0

Regulation further requires all required monitoring sites to be sited to represent community-wide air quality. The community-wide site must be located in a population-oriented area of expected maximum concentration. In addition, the regulation requires State, or where appropriate, local agencies to operate continuous PM_{2.5} analyzers equal to at least one-half (round up) the minimum required monitoring sites. On this point, the regulation further explains that at least one required continuous analyzer in each MSA must be collocated with one of the required FRM/FEM/ARM monitors unless the monitor is itself a continuous FEM or ARM monitor in which case no collocation requirement applies. Finally, the regulation requires States to establish PM_{2.5} background and transport sites, as well as conduct PM_{2.5} chemical speciation utilizing Speciation Trends Network (STN). No such sites are located in Imperial County.

US EPA approved FRM PM_{2.5} monitors operate within the cities of Brawley, El Centro, and Calexico. The Brawley and El Centro PM_{2.5} monitors (which are not collocated) represent a reasonably homogeneous urban sub-region with similar land use and land

surface characteristics. These sites provide information about trends and compliance with the NAAQS. The Calexico site includes collocated FRM PM_{2.5} monitors and collocated continuous PM_{2.5} analyzers combined these monitors represent those characteristics concentrations associated with heavy mobile emissions. Because of the close proximity of the international port of entry the Calexico PM_{2.5} monitors combined are appropriate for the evaluation of possible short-term population exposure, trends and compliance with the NAAQS. Finally, the Calexico monitors consistently record the highest concentrations for PM_{2.5} within the Imperial County air monitoring network. Therefore, the most appropriate spatial scale for Brawley and El Centro is the neighborhood scale while the Calexico monitor is best associated with the middle scale.

TABLE 10

Summary for Minimum Monitoring Requirements for Particulate Matter (PM_{2.5})

MSA	County	Population (year 2010)	8-hr design value (2009-2011)	Min # of monitors required	Number of active monitors	Monitors needed
20940 El Centro	Imperial	174,528	37.5µ/m ³	1	3	0

SPATIAL AVERAGING APPROACHES FOR PM_{2.5}

The PM_{2.5} NAAQS as specified in 40 CFR part 50 allows State and local air monitoring agencies to spatially average PM_{2.5} air quality data for comparison to the annual PM_{2.5} NAAQS. This approach is not however comparable with the daily PM_{2.5} NAAQS and is directly related to epidemiological studies. The Air District has not opted to use spatial averaging nor has the State included spatial averaging in Calexico. Consultation with CARB and US EPA will occur should circumstances change such that the Air District would consider spatial averaging as necessary in the future.

IV PROPOSED MODIFICATIONS TO THE NETWORK DESIGN

Calexico East

CARB has discontinued monitoring activities at the Calexico East site since July 2010. However US EPA has not formally approved the closure of Calexico East site.

Calexico Ethel

CARB is currently evaluating the relocation of the Calexico Ethel site. The current site has been overrun by development and what was once a proper siting for the station is no longer the case. The proposed relocation is within a 1 mile perimeter from the current location. No actual changes will occur until US EPA formally approves the newly proposed site.

V QUALITY SYSTEM REQUIREMENTS

A Quality Management Plans (QMP) and Quality Assurance Project Plans (QAPP)

Federal regulation requires all organizations to develop a quality system which allows for the proper management of monitoring information in a systematic and organized manner. The quality system, when well developed, provides a framework for planning, implementing, assessing, reporting and for carrying out required quality assurance and quality control activities. Developing a Quality management plan (QMP) and a quality assurance project plan (Q APP) assures that monitoring results are well-defined for need, use, purpose, monitoring objective, as well as, compliance with applicable standards and statutory requirements.

The QMP describes the quality system in terms of the organizational structure, functional responsibilities of management and staff, lines of authority, and required interfaces for those planning, implementing, assessing and reporting activities involving environmental data operations. The QMP must be approved by the Regional Administrator. The QAPP is a formal document describing the quality system in such a manner as to assure that the results of work performed will satisfy the stated objectives. Ultimately, the monitoring quality system must have a demonstration of adequate resources both in personnel and funding.

Currently, the Air District is developing its QMP and QAPP and expects to have a draft version of both by fall for review by CARB and US EPA. In addition, all Standard Operating Procedures, station site visit logs, troubleshooting and check logs have been updated and are in use by field technicians and reviewers.

B DATA REVIEW AND SUBMITTAL

Currently, all quality control and assurance procedures are in place, despite the fact that the QMP and QAPP have not been finalized. In practice, field technicians review and document all checks, flows, visits and troubleshooting evidence onto logs which are maintained at each station. All data is reviewed and all instrument systems are verified in working order on a daily basis. In order to maintain quality control prior to submitting certified data to CARB all data is reviewed by staff that is not tied to the data generation activity. Once all data points are checked and verified then staff submits the data in a formalized manner as certified data to CARB. In addition to certified data the Air District remits raw uncertified data for Air Quality Index advisories and forecasts.

Certified data submitted to CARB includes, all 1 hour ozone concentrations, all 1 hour NO, NO₂ and NO_x concentrations, all CO 1 hour concentrations, all PM₁₀ continuous 1 hour concentrations, all precision and accuracy data and all 1 hour meteorological concentrations. In addition, the Air District remits all PM₁₀ filter samples to CARB, via a chain of custody protocol and PM_{2.5} filter samples to the San Diego Air Pollution Control District (SDAPCD) utilizing the accepted chain of custody protocol for PM_{2.5}. All data is submitted either by CARB or SDAPCD on to the US EPA Air Quality System (AQS)

after certification by the appropriate agency. Once in AQS US EPA will then affirm completeness and accuracy on an annual basis.

VI OVERALL SUMMARY OF THE IMPERIAL COUNTY AMBIENT AIR MONITORING NETWORK

The following tables and figures summarize the content of information provided within the descriptive sections of the annual network plan. Figure 1 on page 6 is a map listing the current operating ambient air monitoring stations in Imperial County. Table 11 is a list of all the Air Quality Monitoring Site locations. Table 12 lists the pollutants and other parameters monitored by site. Table 13 lists the criteria pollutant spatial scale and monitoring objective. All of the monitors operating in Imperial County are part of the SLAMS network.

The tables in this section give detailed information relating to the sites and monitors. They are presented to show compliance with the monitoring requirements found in 40 CFR58.10.

TABLE 11
Ambient Air Quality Monitoring site locations in Imperial County

Location	Address	ARB No.	AIRS No.	Latitude	Longitude
Niland	7711 English Road, Niland, CA 92257	13997	060254004	33°12'49"	115°32'43"
Westmorland	570 Cook St., Westmorland, CA 92281	13697	060254003	33°01'57"	115°37'25"
Brawley	220 Main St., Brawley, CA 92227	13701	060250007	32°58'42"	115°32'21"
El Centro	150 S. 9th St., El Centro, CA 92243	13694	060251003	32°47'32"	115°33'47"
Calexico Ethel	1029 Belcher St., Calexico, CA 922231	13698	060250005	32°40'34"	115°28'59"

TABLE 12
Pollutants and Parameter Monitored per site

Location	Pollutants Monitored	Parameters Monitored
Niland	O3, PM ₁₀	OT, RH, WD, HWS, BP
Westmorland	O3, PM ₁₀	OT, RH, WD, HWS, BP
Brawley	PM ₁₀ , PM _{2.5}	OT, BP
El Centro	CO, NO ₂ , O3, PM ₁₀ , PM _{2.5}	OT, WD, HWS, BP
Calexico Ethel	CO, SO ₂ , NO ₂ , PM ₁₀ , PM _{2.5}	OT, RH, WD, HWS, BP, SR

Pollutant		Parameter	
O3	Ozone	OT	Outside Temperature
PM ₁₀	Particulate Matter <10 microns	RH	Relative Humidity
PM _{2.5}	Particulate Matter <2.5 microns	WD	Wind Direction
NO2	Nitrogen Dioxide	HWS	Horizontal Wind Speed
CO	Carbon Monoxide	BP	Barometric Pressure
SO2	Sulfur Dioxide	SR-	Solar Radiation

TABLE 13
Summary of Spatial Scale and Monitoring Objectives

Location	CO	NO2	SO2	O3	PM ₁₀	PM _{2.5}
Niland				RS/T	MS/PE/T	
Westmorland				RS/T	MS/PE/T	
Brawley					NS/PE	NS/PE
EI Centro	MS/PE	NS/PE		NS/PE	NS/PE	NS/PE
Calexico Ethel	MS/PE	NS/PE	NS/PE	NS/PE	NS/PE	MS/PE/T

Spatial Scale
 NS Neighborhood Scale
 RS Regional Scale
 MS Middle Scale

Monitoring Objective
 PE Public Exposure
 T Transport

VII DETAILED SITE INFORMATION

The following tables and figures were downloaded from the CARB Monitoring Network webpage. The detailed information is a product of State assessment and does not necessarily reflect the findings within this document. In any event, this section provides evidence in addition to the previous pages that all established monitoring sites meet minimum federal requirements.

Niland Monitoring Station Details

Site Name	Niland		
AQS ID	60254004		
GIS Coordinates	Lat 33° 12' 49" Long 115° 32' 43"		
Location	Located in remote setting near the community of Niland		
Address	7711 English Road, Niland, CA 92257		
County	Imperial County		
Dist. to road	20 meters		
Traffic count	50 vehicles per day		
Ground Cover	Dirt		
Representative area	MSA (EI Centro)		
Pollutant	O3	PM10	PM10
Sampling Method	API/Teledyne 400	Anderson 1200	Met One BAM1020
Analysis Method	N/A	Weighed by ARB	N/A
Start Date	6/1/1996	6/1/1996	1/7/2009
Operation Schedule	Continuous	1in 6day	Continuous
Sampling Season	All year	All year	All year
Probe height	4.5m	4.5 m	5.0m
Dist. from supporting structure	1. 5m	1.5 m	1.5 m
Dist. from obstructions on roof	None	None	None
Distance from trees	None	None	None
Unrestricted airflow	360°	360°	360°
Probe Material	Glass & Teflon	N/A	N/A
Residence Time	5.4 sec	N/A	N/A
Is it suitable for comparison against the annual PM2.5?	N/A	No	No
Frequency of flow rate verification for manual PM samplers audit	N/A	Monthly	N/A
Frequency of flow rate verification for automated PM analyzers audit	N/A	N/A	Monthly
Frequency of 1-point QC check (gaseous)	Bi-Weekly	N/A	N/A
Last annual performance evaluation (gaseous)	1/31/2012	N/A	N/A
Last two semi-annual flow rate audits for PM monitors	N/A	1/31/2012	1/31/2012

Site Information for Niland-English Road



AIRS Number	ARB Number	Site Start Date	Reporting Agency and Agency Code
060254004	13997	6/1/96	Imperial County APCD (009)

Site Address	County	Air Basin	Latitude (N)	Longitude (W)	Elevation (m)
7711 English Road, Niland CA 92257	Imperial	Salton Sea	33.21383	-115.54448	-57

Pollutants Monitored (click on parameter link for real-time data)
Note: multiple monitors may be available through the [AQMIS query tool](#).

[O₃](#), [PM₁₀](#), [BAM_{PM10}](#), [Outdoor Temperature](#), [Relative Humidity](#), [Wind Direction](#), [Horizontal Wind Speed](#), [Barometric Pressure](#)

Niland Site Survey Report

Siting Information

Site Name: Niland-English Road	Audit Date: 2012-01-31	ARB Number: 13997	AIRS Number: 060254004
Address: 7711 English Road Niland, CA 92257	Latitude: N 33.21383	Longitude: W -115.54448	Elevation (m): -57
	Auditors: Eric Burton Chris Deidrick	Site Technician: Michael Green	Site Phone:
Operating Agency: Imperial County APCD		Site Report: Yes	Site Photos: Yes

General Siting Conditions

Station Temperature	Traffic	Topography	Predominant Wind Direction: West
Controlled: Yes	Description: Remote	Site: Level	Arc Air Flow (Deg): 360 Degrees
Recorded: Yes	Distance: 20 meters	Region: Valley	Probe Clean: Yes
Inside Temp: 25 Degrees Celsius	Count (Veh/Day): 50	QA Manual	Manifold Clean: N/A
Meteorology	Non-vehicular Local Sources	Approved: Yes	Cleaning Schedule: As Needed
Located With Instruments: Yes	Description: Agriculture	Agency: Imperial County APCD	Autocalibrator Type: API 400A IZS
Shadowing: No	Distance: 50 meters	Urbanization: Remote	Site Survey Complete: Yes
Boom Orientation (Deg): 349	Direction: 360	Ground Cover: Gravel	Logbook Up To Date: Yes
Temp(Motor/Natural): Natural			

Action Items

Comments

Niland Site Survey Report (Cont.)

Monitor Type	Ozone	PM10-SSI	BAM	Outdoor Temperature
Manufacturer/Model	API/Teledyne 400	Anderson 1200	Met One BAM 1020	MET ONE 064-2
Serial Number	30333	7377	20005420	X4805
POC	1	1	3	1
Data For Record?	Yes	Yes	Yes	Yes
Purpose	SLAMS	Other	Other	Other
Objective	POPULATION EXPOSURE	UNKNOWN	UNKNOWN	-
Scale				-
Height Above Ground	4.6	4.5	5.2	4.2
Height Above Platform	1.6	1.5	2.2	1.2
Sampler Spacing	N/A			N/A
Current Manual Available?	Yes	Yes	Yes	Yes
Instrument Log Up-to-date?	Yes	Yes	Yes	Yes
In-line Filter Change Date	1/27/2012	N/A	N/A	N/A
Cal. Gas Cert. Date	N/A	N/A	N/A	N/A
Calibration Current?	Yes	Yes	Yes	Yes
Calibration Date	5/26/2011	1/26/2011	1/9/2012	1/26/2011
Cal. Equipment Cert. Date	3/24/2011	12/21/2010	3/16/2011	1/11/2011
Obstacle Description	None	None	None	None
Distance to Obstacle	-	-	-	-
Obs. Height Above Inlet	-	-	-	-
Distance to Walls, etc.	-	-	-	-
Distance to Dripline	-	-	-	-
Dominant Influence	Agriculture	Agriculture	Agriculture	-
Residence Time (sec)	4.8	N/A	N/A	N/A
Monitor Type	Wind Direction	Horizontal Wind Speed		
Manufacturer/Model	MET ONE 020-C	MET ONE 010-C		
Serial Number	A6023	A6045		
POC	1	1		
Data For Record?	Yes	Yes		
Purpose	Other	Other		
Objective	-	-		
Scale	-	-		
Height Above Ground	8.5	8.5		
Height Above Platform				
Sampler Spacing	N/A	N/A		
Current Manual Available?	Yes	Yes		
Instrument Log Up-to-date?	Yes	Yes		
In-line Filter Change Date	N/A	N/A		
Cal. Gas Cert. Date	N/A	N/A		
Calibration Current?	Yes	Yes		
Calibration Date	1/26/2011	1/26/2011		
Cal. Equipment Cert. Date	N/A	1/11/2011		
Obstacle Description	None	None		
Distance to Obstacle	-	-		
Obs. Height Above Inlet	-	-		
Distance to Walls, etc.	-	-		
Distance to Dripline	-	-		
Dominant Influence	-	-		
Residence Time (sec)	N/A	N/A		

Westmorland Monitoring Station Details

Site Name	Westmoreland	
AQS ID	060254003	
GIS Coordinates	Lat 33° 01' 57" Long 115° 37' 25"	
Location	Located in suburban setting in the City of Westmoreland	
Address	570 Cook St., Westmoreland, CA 92281	
County	Imperial County	
Dist. to road	20 meters	
Traffic count	100 vehicles per day	
Ground Cover	Dirt	
Representative area	MSA (EI Centro)	
Pollutant	O3	PM10
Sampling Method	API/Teledyne 400	Anderson 1200
Analysis Method	N/A	Weighed by ARB
Start Date	4/1/93	4/1/93
Operation Schedule	Continuous	1in 6day
Sampling Season	All year	All year
Probe height	5m	5m
Dist. from supporting structure	1.3 m	1.5
Disl. from obstructions on roof	None	None
Distance from trees	None	None
Unrestricted airflow	360°	360°
Probe Material	Glass & Teflon	N/A
Residence Time	6.5 sec	N/A
Is it suitable for comparison against the annual PM2.5?	N/A	No
Frequency of flow rate verification for manual PM samplers audit	N/A	Monthly
Frequency of flow rate verification for automated PM analyzers audit	N/A	N/A
Frequency of 1-point QC check (gaseous)	Bi-Weekly	N/A
Last annual performance evaluation (gaseous)	01/31/12	N/A
Last two semi-annual flow rate audits for PM monitors	N/A	01/31/12

SITE INFORMATION FOR WESTMORLAND



AIRS Number	ARB Number	Site Start Date	Reporting Agency and Agency Code
060254003	13697	4/1/93	Imperial County APCD (009)

Site Address	County	Air Basin	Latitude (N)	Longitude (W)	Elevation (m)
570 Cook St., Westmorland CA 92281	Imperial	Salton Sea	33.03239	-115.62362	-43

<p>Pollutants Monitored (click on parameter link for real-time data) Note: multiple monitors may be available through the AQMIS query tool.</p> <p>O₃, PM₁₀, Outdoor Temperature, Relative Humidity, Wind Direction, Horizontal Wind Speed, Barometric Pressure</p>
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Westmorland Site Survey Report

Siting Information

Site Name: Westmorland	Audit Date: 2012-01-31	ARB Number: 13697	AIRS Number: 060254003
Address: 570 Cook St. Westmorland, CA 92281	Latitude: N 33.03239	Longitude: W -115.62362	Elevation (m): -43
	Auditors: Chris Deidrick Eric Burton	Site Technician: Michael Green	Site Phone:
Operating Agency: Imperial County APCD		Site Report: Yes	Site Photos: Yes

General Siting Conditions

Station Temperature Controlled: Yes Recorded: Yes Inside Temp: 25 Degrees Celsius	Traffic Description: Rural Distance: 20 meters Count (Veh/Day): 100	Topography Site: Level	Predominant Wind Direction: West
		Region: Level	Arc Air Flow (Deg): 360 Degrees
		QA Manual	Probe Clean: Yes
Meteorology Located With Instruments: Yes Shadowing: No Boom Orientation (Deg): 347 Temp(Motor/Natural): Natural	Non-vehicular Local Sources Description: None Distance: N/A Direction: N/A	Approved: Yes	Manifold Clean: N/A
		Agency: Imperial County APCD	Cleaning Schedule: As Needed
		Urbanization: Rural	Autocalibrator Type: API 400A IZS
		Ground Cover: Gravel	Site Survey Complete: Yes
			Logbook Up To Date: Yes

Action Items

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Comments

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Westmorland Site Survey Report (Cont.)

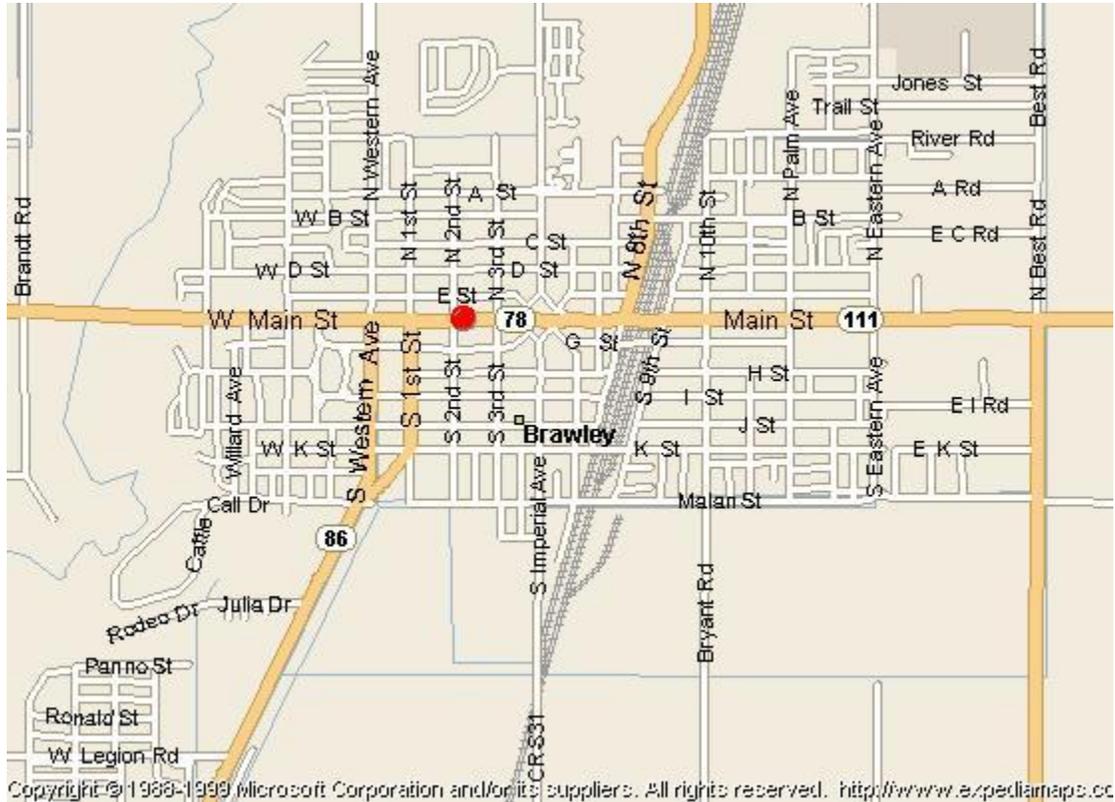
Monitor Type	Ozone	PM10-SSI	Outdoor Temperature
Manufacturer/Model	API/Teledyne 400	Anderson 1200	MET ONE 064-2
Serial Number	30331	P1770	X4808
POC	1	1	1
Data For Record?	Yes	Yes	Yes
Purpose	SLAMS	SLAMS	Other
Objective	UNKNOWN	UNKNOWN	-
Scale			-
Height Above Ground	4.3	4.6	4
Height Above Platform	1.2	1.5	0.9
Sampler Spacing	N/A		N/A
Current Manual Available?	Yes	Yes	Yes
Instrument Log Up-to-date?	Yes	Yes	Yes
In-line Filter Change Date	1/27/2012	N/A	N/A
Cal. Gas Cert. Date	N/A	N/A	N/A
Calibration Current?	No	Yes	No
Calibration Date	3/3/2011	1/26/2011	1/26/2011
Cal. Equipment Cert. Date	12/15/2010	12/21/2010	1/11/2011
Obstacle Description	None	None	None
Distance to Obstacle	-	-	-
Obs. Height Above Inlet	-	-	-
Distance to Walls, etc.	-	-	-
Distance to Dripline	-	-	-
Dominant Influence	Vehicular	Vehicular	-
Residence Time (sec)	6.5	N/A	N/A

Monitor Type	Horizontal Wind Speed
Manufacturer/Model	MET ONE 010-C
Serial Number	X4246
POC	1
Data For Record?	Yes
Purpose	Other
Objective	-
Scale	-
Height Above Ground	8.5
Height Above Platform	
Sampler Spacing	N/A
Current Manual Available?	Yes
Instrument Log Up-to-date?	Yes
In-line Filter Change Date	N/A
Cal. Gas Cert. Date	N/A
Calibration Current?	Yes
Calibration Date	11/30/2011
Cal. Equipment Cert. Date	12/28/2010
Obstacle Description	None
Distance to Obstacle	-
Obs. Height Above Inlet	-
Distance to Walls, etc.	-
Distance to Dripline	-
Dominant Influence	-
Residence Time (sec)	N/A

Brawley Monitoring Station Details

Site Name	Brawley		
ADS 10	060250007		
GIS Coordinates	Lat 32° 58' 42" Long 115° 32' 21"		
Location	Located in city center setting in the City of Brawley		
Address	220 Main St., Brawley, CA 92227		
County	Imperial County		
Dist. to road	30 meters		
Traffic count	5000 vehicles per day		
Ground Cover	Roof		
Representative area	MSA (El Centro)		
Pollutant	PM 2.5	PM10	PM10
Sampling Method	R&P seq. WINS	Anderson 1200	BAM 1020
Analysis Method	Weighed by SDAPCD	Weighed by ARB	N/A
Start Date	01/01/04	01/01/04	01/07/09
Operation Schedule	1 in 3 day	1 in 6 day	Continuous
Sampling Season	All year	All year	All year
Probe height	10.0 m	10.0m	10.0 m
Dist. from supporting structure	1.5 m	1.5 m	1.5 m
Dist. from obstructions on roof	None	None	None
Distance from trees	None	None	None
Unrestricted airflow	360°	360°	360°
Probe Material	N/A	N/A	N/A
Residence Time	N/A	N/A	N/A
Is it suitable for comparison against the annual PM2.5?	Yes	No	No
Frequency of flow rate verification for manual PM samplers audit	Monthly	Monthly	N/A
Frequency of flow rate verification for automated PM analyzers audit	N/A	N/A	Monthly
Frequency of 1-point QC check (gaseous)	N/A	N/A	N/A
Last annual performance evaluation (gaseous)	N/A	N/A	N/A
Last two semi-annual flow rate audits for PM monitors	01 /09/12	01 /24/12	01/09/12

Site Information for Brawley-Main Street



AIRS Number	ARB Number	Site Start Date	Reporting Agency and Agency Code
060250007	13701	1/1/04	Imperial County APCD (009)

Site Address	County	Air Basin	Latitude (N)	Longitude (W)	Elevation
220 Main St., Brawley CA 92227	Imperial	Salton Sea	32° 58' 42"	115° 32' 21"	-13

Pollutants Monitored (click on parameter link for real-time data)
PM ₁₀ , BAM_{PM10} , PM _{2.5} , Outdoor Temperature

Brawley Site Survey Report

Siting Information

Site Name: Brawley-Main Street #2	Audit Date: 2012-01-24	ARB Number: 13701	AIRS Number: 060250007
Address: 220 Main St. Brawley, CA 92227	Latitude: N 32.97831	Longitude: W -115.53904	Elevation (m): -15
	Auditors: Laura Niles Patrick Rainey	Site Technician: Mike Green	Site Phone:
Operating Agency: Imperial County APCD		Site Report: Yes	Site Photos: Yes

General Siting Conditions

Station Temperature Controlled: Yes Recorded: Yes Inside Temp: 25 Degrees Celsius	Traffic Description: Commercial Distance: 30 meters Count (Veh/Day): 5000	Topography Site: Level Region: Level	Predominant Wind Direction: South Arc Air Flow (Deg): 360 Degrees
		QA Manual Approved: Yes Agency: Imperial County APCD	Probe Clean: N/A Manifold Clean: N/A
			Cleaning Schedule: N/A Autocalibrator Type: N/A
Meteorology Located With Instruments: Yes Shadowing: No Boom Orientation (Deg): N/A Temp(Motor/Natural):	Non-vehicular Local Sources Description: None Distance: N/A Direction: N/A	Urbanization: City Center	Site Survey Complete: Yes
		Ground Cover: Roof	Logbook Up To Date: Yes

Action Items

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Comments

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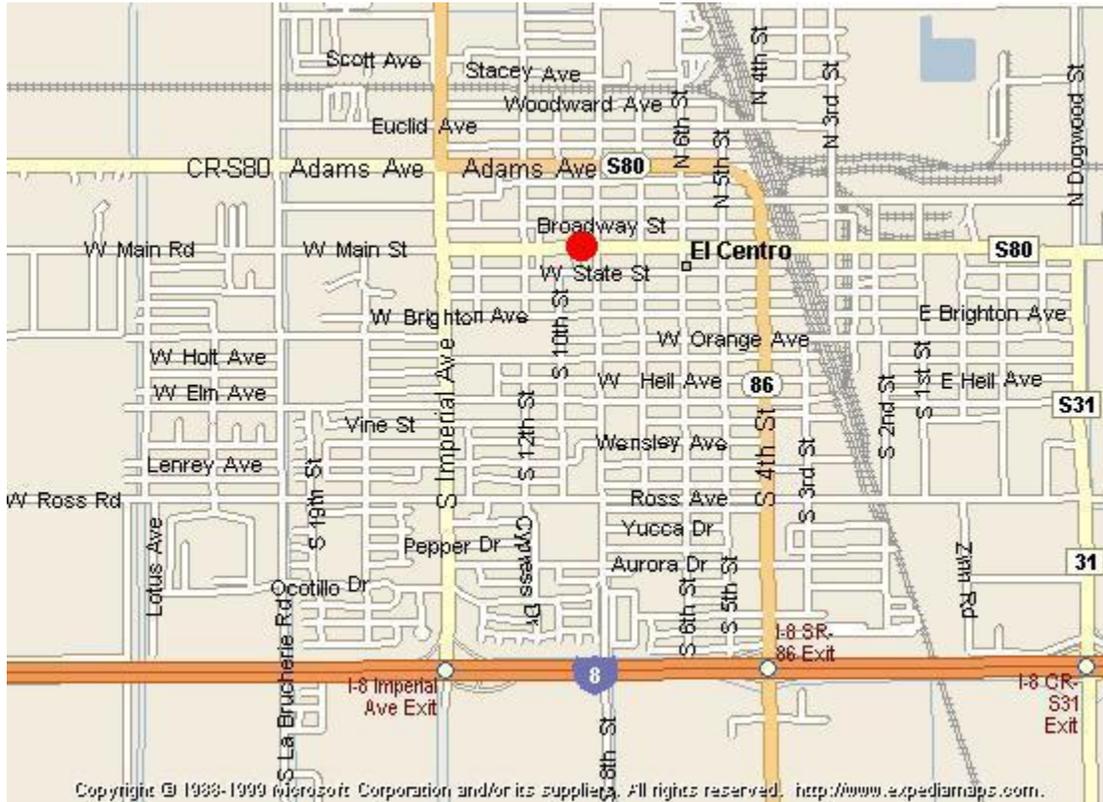
Brawley Site Survey Report (Cont.)

Monitor Type	PM10-SSI	BAM	PM2.5	Outdoor Temperature
Manufacturer/Model	GMW 1200	Met One BAM 1020	R&P 2025	MET ONE 064-2
Serial Number	7346	20021472	20020954	B1681
POC	1	1	1	1
Data For Record?	Yes	Yes	Yes	Yes
Purpose	SLAMS	SLAMS	SLAMS	Unknown
Objective	Other	Other	POPULATION EXPOSURE	-
Scale			Neighborhood	-
Height Above Ground	10	10	10	10
Height Above Platform	1.7	2.4	1.5	1
Sampler Spacing				N/A
Current Manual Available?	No	No	No	No
Instrument Log Up-to-date?	Yes	Yes	Yes	Yes
In-line Filter Change Date	N/A	N/A	N/A	N/A
Cal. Gas Cert. Date	N/A	N/A	N/A	N/A
Calibration Current?	Yes	Yes	Yes	Yes
Calibration Date	1/25/2011	1/9/2012	1/9/2012	1/25/2011
Cal. Equipment Cert. Date	12/21/2010	3/16/2011	3/16/2011	1/11/2011
Obstacle Description	None	None	None	None
Distance to Obstacle	-	-	-	-
Obs. Height Above Inlet	-	-	-	-
Distance to Walls, etc.	-	-	-	-
Distance to Dripline	-	-	-	-
Dominant Influence	Vehicular	Vehicular	Vehicular	-
Residence Time (sec)	N/A	N/A	N/A	N/A

EI Centro Monitoring Station Details

Site Name	EI Centro				
AQS ID	06025 1003				
GIS Coordinates	Lat 32° 47' 32" Long 115° 33' 47"				
Location	Located in city center setting in the City of EI Centro				
Add ress	150 S. 9th St., EI Centro, CA 92243				
County	Imperial County				
Dist. to road	30 meters				
Traffic count	2500 vehicles per day				
Ground Cover	Roof				
Pollutant	NO2	O3	CO	PM2.5	PM10
Sampling Method	API 200A	API/Teledyne 400	API 300	R&P seq. WINS	Anderson 1200
Analysis Method	N/A	N/A	N/A	Weighed by SDAPCD	Weighed by ARB
Start Dale	2/1/88	2/1/88	2/1/88	2/1/88	2/1/88
Operation Schedule	Continuous	Continuous	Continuous	1 in 3 day	1 in 6 day
Sampling Season	All year	All year	All year	All yea r	All year
Probe height	9.2 m	9.2 m	9.2	10.0 m	10.0 m
Dist. from supporting structure	1.8 m	1.8m	1.8 m	1.5 m	1.5m
Dist. from obstructions on roof	None	None	Non e	None	None
Distance from trees	None	None	None	None	None
Unrestricted airflow	360°	360°	360°	360°	360°
Probe Material	Glass & Teflon	Glass & Teflon	Glass & Teflon	N/A	N/A
Residence Time	8.7 sec	8.4 sec	9.4 sec	N/A	N/A
Is it suitable for comparison against the annual PM2.5?	N/A	N/A	N/A	Yes	No
Frequency of flow rate verification for manual PM samplers audit	N/A	N/A	N/A	Monthly	Monthly
Frequency of flow rate verification for automated PM analyzers audit	N/A	N/A	N/A	N/A	N/A
Frequency of 1-point QC check (gaseous)	Bi-Weekly	Bi-Weekly	Bi-Weekly	N/A	N/A
Last annual performance evaluation (gaseous)	01/25/12	01/25/12	01/25/12	N/A	N/A
Last two semi-annual flow rate audits for PM monitors	N/A	N/A	N/A	01/25/12	01/25/12

Site Information for El Centro-9th Street



AIRS Number	ARB Number	Site Start Date	Reporting Agency and Agency Code
060251003	13694	2/1/88	Imperial County APCD (009)

Site Address	County	Air Basin	Latitude (N)	Longitude (W)	Elevation (m)
150 9th St, El Centro CA 92243	Imperial	Salton Sea	32.79215	-115.56299	9

Pollutants Monitored (click on parameter link for real-time data)
Note: multiple monitors may be available through the [AQMS query tool](#).

[CO](#), [NO₂](#), [O₃](#), [PM₁₀](#), [PM_{2.5}](#), [Outdoor Temperature](#), Wind Direction, [Horizontal Wind Speed](#), [Barometric Pressure](#)

El Centro Site Survey Report

Siting Information

Site Name: El Centro-9th Street	Audit Date: 2012-01-25	ARB Number: 13694	AIRS Number: 060251003
Address: 150 9th St El Centro, CA 92243	Latitude: N 32.79215	Longitude: W -115.56299	Elevation (m): 9
	Auditors: Patrick Rainey Laura Niles	Site Technician: Mike Green	Site Phone:
Operating Agency: Imperial County APCD		Site Report: Yes	Site Photos: Yes

General Siting Conditions

Station Temperature Controlled: Yes Recorded: Yes Inside Temp: 22 Degrees Celsius	Traffic Description: Residential Distance: 30 meters Count (Veh/Day): 2500	Topography Site: Level	Predominant Wind Direction: South
		Region: Level	Arc Air Flow (Deg): 360 Degrees
		QA Manual Approved: Yes Agency: Imperial County APCD	Probe Clean: Yes
Urbanization: City Center	Manifold Clean: Yes		
Meteorology Located With Instruments: Yes Shadowing: No Boom Orientation (Deg): 348 Temp(Motor/Natural): Natural	Non-vehicular Local Sources Description: None Distance: N/A Direction: N/A	Ground Cover: Roof	Cleaning Schedule: As Needed
			Autocalibrator Type: Environics 9100
			Site Survey Complete: Yes
			Logbook Up To Date: Yes

Action Items

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Comments

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El Centro Site Survey Report (Cont.)

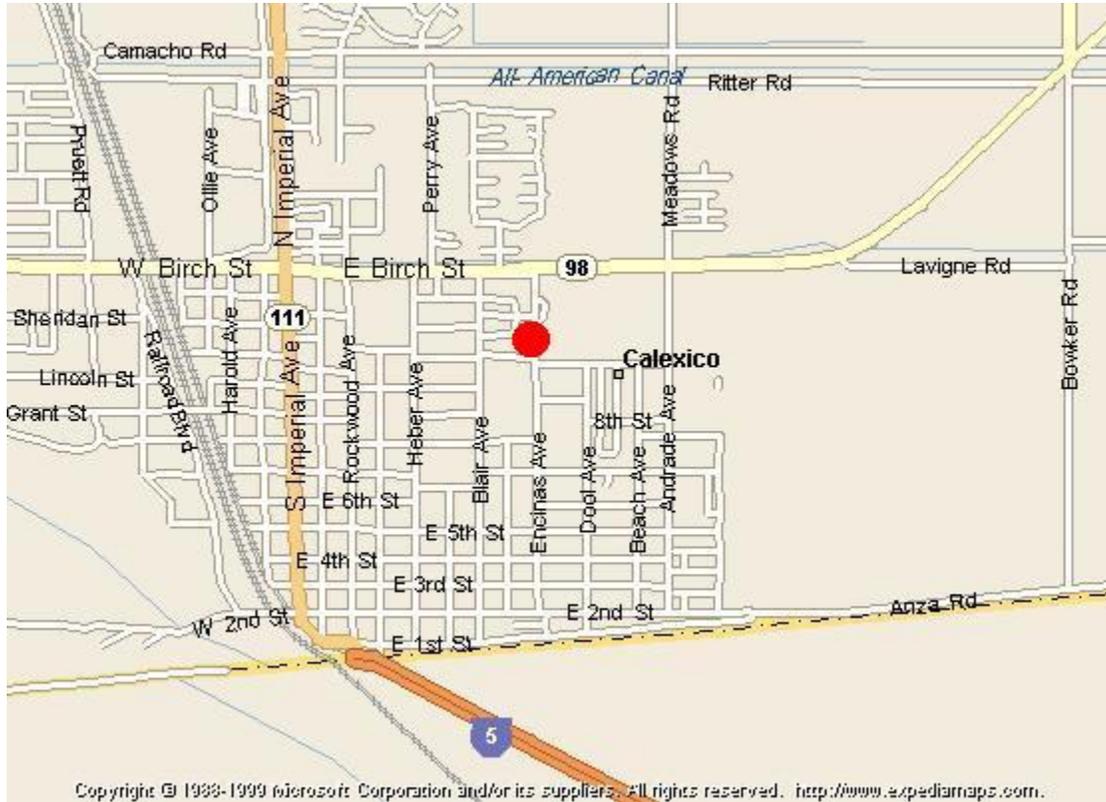
Monitor Type	Carbon Monoxide	Nitrogen Dioxide	Ozone	PM10-SSI
Manufacturer/Model	API 300	API 200A	API/Teledyne 400	SA 1200
Serial Number	30490	2350	30332	7661
POC	1	1	1	1
Data For Record?	Yes	Yes	Yes	Yes
Purpose	Other	SLAMS	SLAMS	SLAMS
Objective	POPULATION EXPOSURE	POPULATION EXPOSURE	UNKNOWN	UNKNOWN
Scale	Null	Null		
Height Above Ground	9.3	11.1	11.1	9.8
Height Above Platform	1.8	1.8	1.8	1.4
Sampler Spacing	N/A	N/A	N/A	
Current Manual Available?	Yes	Yes	Yes	Yes
Instrument Log Up-to-date?	Yes	Yes	Yes	Yes
In-line Filter Change Date	1/24/2012	1/24/2012	1/24/2012	N/A
Cal. Gas Cert. Date	4/23/2010	4/23/2010	N/A	N/A
Calibration Current?	Yes	Yes	Yes	Yes
Calibration Date	3/2/2011	Not Available	3/2/2011	1/27/2011
Cal. Equipment Cert. Date	1/26/2011	1/26/2011	1/26/2011	12/21/2010
Obstacle Description	None	None	None	None
Distance to Obstacle	-	-	-	-
Obs. Height Above Inlet	-	-	-	-
Distance to Walls, etc.	-	-	-	-
Distance to Dripline	-	-	-	-
Dominant Influence	Vehicular	Vehicular	Vehicular	Vehicular
Residence Time (sec)	9.4	8.7	8.4	N/A

Monitor Type	PM2.5	Outdoor Temperature	Wind Direction	Horizontal Wind Speed
Manufacturer/Model	R&P 2025	MET ONE 064-2	MET ONE 020-C	MET ONE 010-C
Serial Number	20020959	X4806	X-4361	U5005
POC	1	1	1	1
Data For Record?	Yes	Yes	Yes	Yes
Purpose	SLAMS	Other	Other	Other
Objective	POPULATION EXPOSURE	-	-	-
Scale	Neighborhood	-	-	-
Height Above Ground	9.8	9.3	9.3	9.3
Height Above Platform	2.1	1.8	2.7	2.7
Sampler Spacing		N/A	N/A	N/A
Current Manual Available?	Yes	Yes	Yes	Yes
Instrument Log Up-to-date?	Yes	Yes	Yes	Yes
In-line Filter Change Date	N/A	N/A	N/A	N/A
Cal. Gas Cert. Date	N/A	N/A	N/A	N/A
Calibration Current?	Yes	Yes	Yes	Yes
Calibration Date	11/10/2011	1/27/2011	11/18/2011	11/17/2011
Cal. Equipment Cert. Date	3/16/2011	1/11/2011	N/A	12/28/2010
Obstacle Description	None	None	None	None
Distance to Obstacle	-	-	-	-
Obs. Height Above Inlet	-	-	-	-
Distance to Walls, etc.	-	-	-	-
Distance to Dripline	-	-	-	-
Dominant Influence	Vehicular	-	-	-
Residence Time (sec)	N/A	N/A	N/A	N/A

Calexico-Ethel Monitoring Station Details

Site Name	Calexico-Ethel							
AQS ID	060250005							
GIS Coordinates	Lat 32° 40' 34" Long 115° 28' 59"							
Location	Located in suburban (residential) area next to a school in City of Calexico							
Address	1020 Belcher St., Calexico, CA 92231							
County	Imperial County							
Dist. to road	20 meters							
Traffic count	7000 vehicles per day							
Ground Cover	Asphalt							
Representative area	MSA (EI Centro)							
Pollutant	NO2	O3	CO	SO_x	PM2.5	PM2.5	PM10	TSP
Sampling Method	API 200E	API/Teledyne 400	Dasibi 3008	Teco 43	R&P seq. WINS	BAM 1020	Anderson 1200	Anderson 1200
Analysis Method	N/A	N/A	N/A	N/A	Weighed by ARB	N/A	Weighed by ARB	Weighed by ARB
Start Date	3/1/94	3/1/94	3/1/94	3/1/94	3/1/94	3/1/94	3/1/94	3/1/94
Operation Schedule	Continuous	Continuous	Continuous	Continuous	1 in 3day	Continuous	1 in 6 day	1 in 6 day
Sampling Season	All year	All year	All year	All year	All year	All year	All year	All year
Probe height	5.7 m	5.7 m	5.7m	5.7m	2.5m	2.5m	6.0m	6.0m
Dist. from supporting structure	2.2m	2.2 m	2.2m	2,2m	1.5m	1.5m	1.5m	1.5 m
Dist. from obstructions on roof	None	None	None	None	None	None	None	None
Distance from trees	None	None	None	None	None	None	None	None
Unrestricted airflow	360°	360°	360°	360°	360°	360°	360°	360°
Probe Material	Glass & Teflon	Glass & Teflon	Glass & Teflon	Glass & Teflon	N/A	N/A	N/A	N/A
Residence Time	9.6 sec	6.3 sec	7.1 sec	10.3 sec	N/A	N/A	N/A	N/A
Is it suitable for comparison against the annual PM2.5?	N/A	N/A	N/A	N/A	Yes	yes	No	No
Frequency of flow rate verification for manual PM samplers audit	N/A	N/A	N/A	N/A	Monthly	N/A	Monthly	Monthly
Frequency of flow rate verification for automated PM analyzers audit	N/A	N/A	N/A	N/A	N/A	Monthly	N/A	N/A
Frequency of 1-point QC check (gaseous)	Bi-Weekly	Bi-Weekly	Bi-Weekly	Bi-Weekly	N/A	N/A	N/A	N/A
last annual performance evaluation (gaseous)	01/24/12	01/24/12	01/24/12	01/24/12	N/A	N/A	N/A	N/A
Last two semi-annual flow rate audits for PM monitors	N/A	N/A	N/A	N/A	01/24/12	01/24/12	01/24/12	01/24/12

Calexico-Ethel Monitoring Station Details



AIRS Number	ARB Number	Site Start Date	Reporting Agency and Agency Code
060250005	13698	3/1/94	California Air Resources Board (001)

Site Address	County	Air Basin	Latitude (N)	Longitude (W)	Elevation
1029 Belcher St, Calexico CA 92231	Imperial	Salton Sea	32° 40' 34"	115° 28' 59"	6

Pollutants Monitored (click on parameter link for real-time data)
CO , SO₂ , NO₂ , H₂S , O₃ , PM ₁₀ , BAM_{PM2.5} , PM _{2.5} , TSP, Toxics, Cr ⁶⁺ , Outdoor Temperature , Relative Humidity , Wind Direction, Horizontal Wind Speed , Barometric Pressure , Solar Radiation

Calexico Site Survey Report

Siting Information

Site Name: Calexico-Ethel Street	Audit Date: 2012-01-24	ARB Number: 13698	AIRS Number: 060250005
Address: 1029 Belcher St Calexico, CA 92231	Latitude: N 32.67618	Longitude: W -115.48307	Elevation (m): 3
	Auditors: Patrick Rainey Laura Niles	Site Technician: Tony Royer	Site Phone:
Operating Agency: California Air Resources Board		Site Report: Yes	Site Photos: Yes

General Siting Conditions

<p style="text-align: center;">Station Temperature</p> <p>Controlled: Yes</p> <p>Recorded: Yes</p> <p>Inside Temp: 24.7 Degrees Celsius</p>	<p style="text-align: center;">Traffic</p> <p>Description: Residential</p> <p>Distance: 20 meters</p> <p>Count (Veh/Day): 7000</p>	<p style="text-align: center;">Topography</p> <p>Site: Level</p> <p>Region: Level</p>	<p>Predominant Wind Direction: West</p> <p>Arc Air Flow (Deg): 360 Degrees</p> <p>Probe Clean: Yes</p>
<p style="text-align: center;">Meteorology</p> <p>Located With Instruments: Yes</p> <p>Shadowing: No</p> <p>Boom Orientation (Deg): 348</p> <p>Temp(Motor/Natural): Motor</p>	<p style="text-align: center;">Non-vehicular Local Sources</p> <p>Description: Parking lot</p> <p>Distance: 3 meters</p> <p>Direction: 270</p>	<p style="text-align: center;">QA Manual</p> <p>Approved: Yes</p> <p>Agency: Air Resources Board</p> <p>Urbanization: Suburban</p> <p>Ground Cover: Roof</p>	<p>Manifold Clean: Yes</p> <p>Cleaning Schedule: Annually</p> <p>Autocalibrator Type: Environics 9100</p> <p>Site Survey Complete: Yes</p> <p>Logbook Up To Date: Yes</p>

Action Items

Comments

Calexico Site Survey Report (Cont.)

Monitor Type	Carbon Monoxide	Sulfur Dioxide	Nitrogen Dioxide	Ozone
Manufacturer/Model	Dasibi 3008	TECO 43A, 43B, 43C, 43i	API 200E	API/Teledyne 400
Serial Number	20004111	20021372	20072337	20060128
POC	1	1	1	1
Data For Record?	Yes	Yes	Yes	Yes
Purpose	SLAMS	SLAMS	SLAMS	SLAMS
Objective	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Scale	Null	Null	Null	
Height Above Ground	11.1	11.1	5.7	5.7
Height Above Platform	1.8	1.8	1.7	1.7
Sampler Spacing	N/A	N/A	N/A	N/A
Current Manual Available?	Yes	Yes	Yes	Yes
Instrument Log Up-to-date?	Yes	Yes	Yes	Yes
In-line Filter Change Date	1/20/2012	1/20/2012	1/20/2012	1/20/2012
Cal. Gas Cert. Date	4/23/2010	4/23/2010	4/23/2010	N/A
Calibration Current?	Yes	Yes	Yes	Yes
Calibration Date	8/9/2011	8/9/2011	8/9/2011	7/28/2011
Cal. Equipment Cert. Date	3/2/2011	3/2/2011	3/2/2011	3/24/2011
Obstacle Description	None	None	None	None
Distance to Obstacle	-	-	-	-
Obs. Height Above Inlet	-	-	-	-
Distance to Walls, etc.	-	-	-	-
Distance to Dripline	-	-	-	-
Dominant Influence	Vehicular	Vehicular	Vehicular	Vehicular
Residence Time (sec)	7.1	10.3	9.6	6.3

Monitor Type	PM10-SSI	TSP	BAM-PM2.5	BAM-PM2.5
Manufacturer/Model	SA 1200	Tisch Tisch	Met One BAM 1020	Met One BAM 1020
Serial Number	2970	TE-10557	20020893	20021151
POC	1	1	3	4
Data For Record?	Yes	No	Yes	Yes
Purpose	SLAMS		Unknown	Unknown
Objective	UNKNOWN	UNKNOWN	POPULATION EXPOSURE	POPULATION EXPOSURE
Scale			Neighborhood	Neighborhood
Height Above Ground	6	5.4	5.7	5.7
Height Above Platform	1.5	1.4	1.7	1.7
Sampler Spacing		2	1.5	2
Current Manual Available?	Yes	Yes	Yes	Yes
Instrument Log Up-to-date?	Yes	Yes	Yes	Yes
In-line Filter Change Date	N/A	N/A	N/A	N/A
Cal. Gas Cert. Date	N/A	N/A	N/A	N/A
Calibration Current?	Yes	No	Yes	Yes
Calibration Date	11/8/2011	1/28/2010	8/19/2011	8/19/2011
Cal. Equipment Cert. Date	3/25/2011	Not Available	3/16/2011	3/16/2011
Obstacle Description	None	None	None	None
Distance to Obstacle	-	-	-	-
Obs. Height Above Inlet	-	-	-	-
Distance to Walls, etc.	-	-	-	-
Distance to Dripline	-	-	-	-
Dominant Influence	Vehicular		Vehicular	Vehicular
Residence Time (sec)	N/A	N/A	N/A	N/A

Calexico Site Survey Report (Cont.)

Monitor Type	PM2.5	PM2.5	Xontech	Outdoor Temperature
Manufacturer/Model	R&P 2025	R&P 2025	Xontech 924	MET ONE 060A
Serial Number	20081149	20081150	20021009	P8795
POC	1	2	1	1
Data For Record?	Yes	Yes	Yes	Yes
Purpose	Unknown	Unknown	Unknown	SLAMS
Objective	POPULATION EXPOSURE	POPULATION EXPOSURE	UNKNOWN	-
Scale	Neighborhood	Neighborhood		-
Height Above Ground	3	3	5.5	8
Height Above Platform	2	2	1	
Sampler Spacing	1	1		N/A
Current Manual Available?	Yes	Yes	Yes	Yes
Instrument Log Up-to-date?	Yes	Yes	Yes	Yes
In-line Filter Change Date	N/A	N/A	N/A	N/A
Cal. Gas Cert. Date	N/A	N/A	N/A	N/A
Calibration Current?	Yes	Yes	Yes	Yes
Calibration Date	8/24/2011	8/24/2011	10/5/2011	8/10/2011
Cal. Equipment Cert. Date	3/16/2011	3/16/2011	Not Available	3/23/2011
Obstacle Description	None	None	None	None
Distance to Obstacle	-	-	-	-
Obs. Height Above Inlet	-	-	-	-
Distance to Walls, etc.	-	-	-	-
Distance to Dripline	-	-	-	-
Dominant Influence	Vehicular	Vehicular	Vehicular	-
Residence Time (sec)	N/A	N/A	N/A	N/A

Monitor Type	Wind Direction	Horizontal Wind Speed	Barometric Pressure
Manufacturer/Model	MET ONE 020-C	MET ONE 010-C	MET ONE 090C
Serial Number	P0378	E1112	60250005
POC	1	1	1
Data For Record?	Yes	Yes	Yes
Purpose	SLAMS	SLAMS	Other
Objective	-	-	-
Scale	-	-	-
Height Above Ground	10	10	6
Height Above Platform			
Sampler Spacing	N/A	N/A	N/A
Current Manual Available?	Yes	Yes	Yes
Instrument Log Up-to-date?	Yes	Yes	Yes
In-line Filter Change Date	N/A	N/A	N/A
Cal. Gas Cert. Date	N/A	N/A	N/A
Calibration Current?	Yes	Yes	Yes
Calibration Date	8/10/2011	8/10/2011	2/1/2011
Cal. Equipment Cert. Date	N/A	6/14/2010	1/6/2011
Obstacle Description	None	None	None
Distance to Obstacle	-	-	-
Obs. Height Above Inlet	-	-	-
Distance to Walls, etc.	-	-	-
Distance to Dripline	-	-	-
Dominant Influence	-	-	-
Residence Time (sec)	N/A	N/A	N/A

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 ozone 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 US EPA.

(2) Any annual monitoring network plan that proposes SLAMS network modifications including new monitoring sites is subject to the approval of the US 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 O 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}NAAOS 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} NAAOS 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 O 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 §58.14.

Glossary of Acronyms

AQS	Air quality system
ARM	Approved regional method
BAM	Beta Attenuation Mass Monitor
CARB	California Air Resources Board
CFR	Code of Federal Regulations
CO	Carbon monoxide
FEM	Federal equivalent method
FRM	Federal reference method
ICAPCD	Imperial County Air Pollution Control District
MSA	Metropolitan Statistical Area
NAAQS	National ambient air quality standard
Ncore	National core ambient monitoring network
NO ₂	Nitrogen dioxide
O ₃	Ozone
PAMS	Photochemical assessment monitoring sites
PM ₁₀	Particulate Matter less than 10 microns in diameter
PM _{2.5}	Particulate Matter less than 2.5 microns in diameter
PMC	Particulate Matter Coarse
ppm	Parts per million
PWEI	Population Weighted Emission Index
SDAPCD	San Diego Air Pollution Control District
SIP	State implementation plan
SLAMS	State and Local Air Monitoring Station
SO ₂	Sulfur Dioxide
SPM	Special Purpose Monitor
SSI	Size Selective Inlet
US EPA	United States Environmental Protection Agency