

Commonwealth of Puerto Rico/ Office of the Governor
Puerto Rico Environmental Quality Board

Puerto Rico Air Monitoring Network Plan

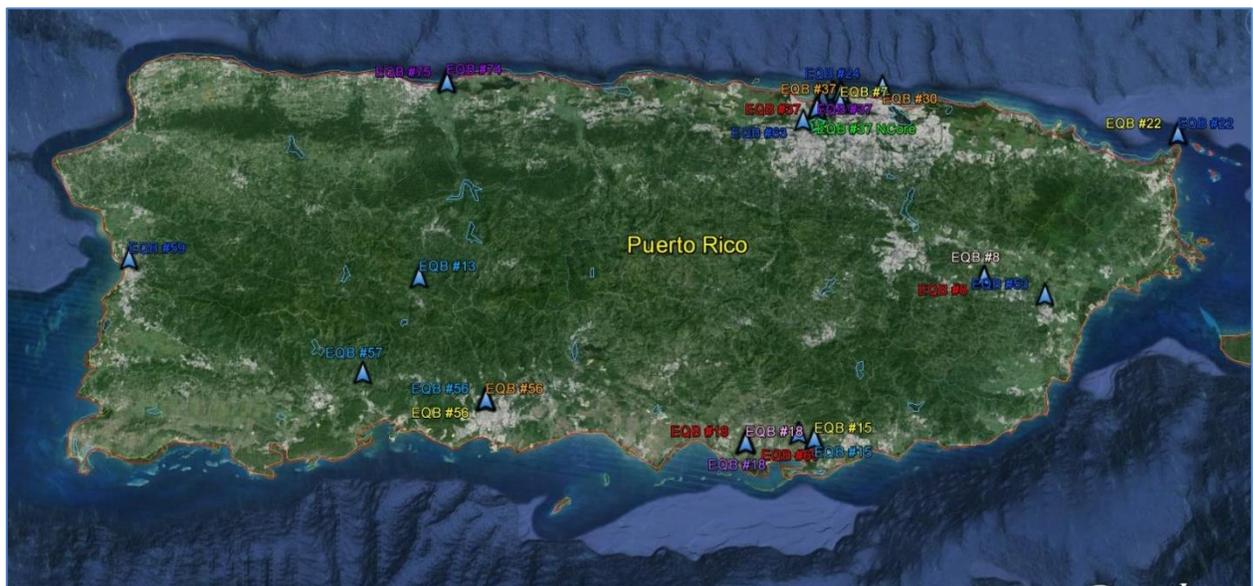


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Acronyms and Abbreviations

AQS: Air Quality System

CFR: Code Federal Register

CBSA: Core-based Statistical Area

EPA: Environmental Protection Agency

FEM: Federal Equivalent Method

FRM: Federal Reference Method

MSA: Metropolitan Statistical Area

NAAQS: National Air Ambient Quality Standards

NAMS: National Air Monitoring Stations

NCore: National Core Multi-pollutant Monitoring Stations

NO₂: Nitrogen Dioxide

O₃: Ozone

OSI: Information System Office

PAMS: Photochemical Assessment Monitoring Stations

PB: Lead

PM₁₀: Particulate Matter

PM_{2.5}: Fine Particulate Matter

ppm: parts per million

PR: Puerto Rico

PREQB: Puerto Rico Environmental Quality Board

PREPA: Puerto Rico Power Electrical Authority

QAMP: Quality Assurance Monitoring Plan

QAPP: Quality Assurance Project Plan

RCPA: Regulation for the Control of Atmospheric Pollution of Puerto Rico

SLAMS: State and Local Air Monitoring Stations

SO₂: Sulfur Dioxide

SO₄: Sulfate

SPM: Special Purpose Monitor

TEOM: Tapered Element Oscillating Microbalance

TSP: Total Suspended Particulate

1.0 Introduction

An annual review of the Air Quality Monitoring Network is required by Federal Regulations as a means to identify and report needs for additions, relocations, or terminations of monitoring sites or instrumentation. This report describes the network of ambient air quality monitors in the jurisdiction of and operated by the Puerto Rico Environmental Quality Board (PREQB). It includes a review of actions taken during the 2012-2013 fiscal year and plans for action in the year ahead. This plan addresses the requirement for an annual network plan as listed in Title 40, Part 58, Section 10 of the Code of Federal Regulations (40 CFR § 58.10). Regulations require the report be submitted to the U.S. Environmental Protection Agency (EPA) by July 1 of each year after a 30 day public comment period.

The Plan is an examination and evaluation of the PREQB network of ambient air pollution monitoring stations. Each year, PREQB staff conducts an annual review of its air monitoring network and submits it to the EPA. The review process focuses on current and future network air monitoring strategies and network changes are made in consultation with the EPA.

When re-location of monitoring sites is required, site reports are updated in the EPA's Air Quality System (AQS) to document compliance with established sitting criteria for the new locations. The *2014 PR Air Monitoring Network Plan* includes a review of actions taken since preparation of the last plan (July 2013), and plans for action in the year ahead.

2.0 Public Comments

Pursuant to Federal regulations, this report will be available for a 30 day public inspection and comment period prior to submission of the final plan to EPA. Any comments received during the public inspection period will be forwarded to the United States Environmental Protection Agency (EPA) concurrently with submittal of the plan. This report may be viewed on the PREQB's website, www.jca.gobierno.pr and hardcopies are available for review at PREQB office. Written comments should be submitted to Lucia Fernandez Fontan, Chief of the Data Validation and Air Dispersion Models Division, at luciafernandez@jca.gobierno.pr, 787-767-8181 ext. 3254. The final document is submitted to the EPA on July 1, 2014 along with any public comments received to fulfill Federal regulatory requirements.

3.0 MONITORING DATA QUALITY ASSURANCE

The Quality Assurance Management Plan (QAMP) was prepared by the Puerto Rico Environmental Quality Board and approved by EPA Region II. The air monitoring network meets the criteria identified in the QAMP.

The Quality Assurance Project Plan (QAPP) is under revision. The QAPP describes in greater detail the monitoring effort and quality assurance procedures that the data must meet before it is considered as quality assured and acceptable for submittal to the public and EPA. The Standard Operating Procedure (SOP) manuals have been prepared by the Air Quality Area. It identifies the steps, procedures and criteria that must be met in operating of the monitoring network and the validation of the air quality data.

4.0 Network Design

The PREQB operates 41 permanent, multi-pollutant monitoring stations as follows:

- ✚ ten (10) PM_{2.5} FRM
- ✚ three (3) continuous PM_{2.5}
- ✚ five (5) PM₁₀ FRM sites
- ✚ two (2) continuous PM₁₀ sites
- ✚ two (2) ozone sites
- ✚ five (5) sulfur dioxide (SO₂) sites
- ✚ four (4) lead (Pb) sites
- ✚ two (2) nitrogen oxide (NO₂) sites
- ✚ three (3) carbon monoxide (CO) sites
- ✚ four (4) PM₁₀ -Sulfates (SO₄) sites
- ✚ one (1) NCore site

The Appendix 1 provides a list of monitoring locations, the EPA AQS site codes, the pollutants measured at each site, the spatial scale and the site type for each monitor at all sites, the monitoring purpose for the monitors at each site and the monitoring purpose for continuous particulate analyzers at each site.

4.1 PM_{2.5} Air-Monitoring Network

The PREQB operates twelve (12) PM_{2.5} sites in the air-monitoring network, 10 FRM, two (2) continuous PM_{2.5} and two (2) collocated PM_{2.5} FRM samplers. The FRM operate on a 1-in-3 day sample schedule. The QA FRM samplers operate on a 1-in-6 day sample schedule. The continuous PM_{2.5} samplers are operated year-round and the measurements are sent to the EPA AQS on an hourly basis. All continuous PM_{2.5} samplers have TEOM 1400 AB. All the sites of PM_{2.5} continuous will be for AQI purposes. The details of these sites are included in Appendix 1: Site Description.

Changes proposed to PM_{2.5} network

EQB propose replace some exiting PM_{2.5} SLAMS sites operating filters-based FRMS with continuous FEMS according with the recent NAAQS reviews and with the recently PM_{2.5} continuous FEMS. One of the FEMS monitors will be located at station near-road with NO₂ and CO monitors required in CBSAs of 2.5 million or more persons (Buchanan) and two (2) monitors will be located at Cataño and Ponce as part of the AQI report. The changes will be phased in between 2015 and 2017 as is proposed in the NAAQS and Ambient Monitoring requirements.

4.2 PM₁₀ Air-Monitoring Network

The PREQB operates five (5) PM₁₀ FRM sites and two (2) continuous PM₁₀ site in the air-monitoring network. Two of the sites of the FRM are operated every day and three sites are operated every three days (1-in-3 day) sample schedule. Also, PREQB operate two collocated PM₁₀ FRM samplers on a 1-in-6 day sample schedule. The continuous PM₁₀ samplers are operated year-round and the measurements are sent to the EPA AQS website and used for AQI purposes on an hourly basis. The details of these sites are included in Appendix 1: Site Description.

Changes proposed to PM₁₀ network

PREQB don't propose changes to the PM₁₀ network

4.3 Ozone Air-Monitoring Network

The PREQB operates two ozone sites in the air-monitoring network. The ozone samplers are operated year-round and the measurements are sent to the EPA AQS on an hourly basis. The ozone sites are classified as SLAMS. Details of the sites location are included in Appendix 1: Site Description.

Changes proposed to Ozone network

PREQB don't propose changes to the Ozone network

4.4 SO₂ Air-Monitoring Network

The PREQB operates five (5) sulfur dioxide (SO₂) sites in the air-monitoring network. All SO₂ samplers are operated year-round and the measurements are sent to the EPA AQS on an hourly basis.

The existing SO₂ monitoring locations represent appropriate monitoring locations for the new 1-hour standard monitoring requirements. The monitoring network was design to meet three primary monitoring objectives, as listed in 40 CFR Part 58 Appendix D, Section 1. It includes install the new SO₂ monitor at Guayanilla as proposed during the 2012-2013 fiscal year and plans for action in the year ahead. The details are including at Appendix 1: Site Description.

Changes proposed to SO₂ network

EQB proposes relocate the SO₂ monitor located at Juncos to Guayanilla new site approved by EPA in the Network Plan 2012.

4.5 Lead Air-Monitoring Network

The PREQB operates four (4) lead (Pb) sites in the air-monitoring network. All Pb samplers are operated year-round and the measurements are sent to the EPA AQS on daily basis. The SLAMS Pb sites use FRM monitors. The details of these sites are included in Appendix 1: Site Description.

Changes proposed to lead network

EQB proposes maintain the lead networks as identical to the Network Plan 2013 approved by EPA. EQB maintain four (4) stations and install a new station at Guayanilla according to the regulation as proposed during the 2012-2013 fiscal year and plans for action in the year ahead. This site was proposed in the Network Plan 2012 and approved by EPA.

4.6 NO₂ Air-Monitoring Network

The PREQB operates two (2) nitrogen oxide (NO₂) sites in the air-monitoring network. The NO₂ samplers are operated year-round and the measurements are sent to the EPA AQS on an hourly basis. The SLAMS NO₂ sites are used as a FRM. The monitor locates at Salinas is temporary shutdown. The details of these sites are included in Appendix 1: Site Description.

Changes proposed to NO₂ network

PREQB continues with the installation of the new stations at Guaynabo and Caguas area's according to the regulation as proposed during the 2012-2013 fiscal year and plans for action in the year ahead. The sites were proposed in the Network Plan 2012 and approved by EPA.

4.7 CO Air-Monitoring Network

The PREQB operates three (3) carbon monoxide (CO) sites in the air-monitoring network. All CO samplers are operated year-round and the measurements are sent to the EPA AQS on an hourly basis. The SLAMS CO sites use FRM monitors. The details of these sites are included in Appendix 1: Site Description.

Changes proposed to CO network

PREQB proposes located a new CO monitor at station near-road with NO₂ and PM_{2.5} monitors required in CBSAs of 2.5 million or more persons (Buchanan). The changes will be phased in between 2015 and 2017 as is proposed in the NAAQS and Ambient Monitoring requirements.

4.8 PM Sulfate Air Monitoring Network

The PREQB operates four (4) PM₁₀ -Sulfates (SO₄) sites in the air-monitoring network. The particulate sulfate-monitoring network utilizes PM₁₀ filter sampling analysis to generate ambient sulfate concentrations. All SO₄ samplers are operated year-round and the measurements are sent to the EPA AQS on a daily basis. Details of the sites locations are included in Appendix 1: Site Description.

Changes proposed to SO₄ network

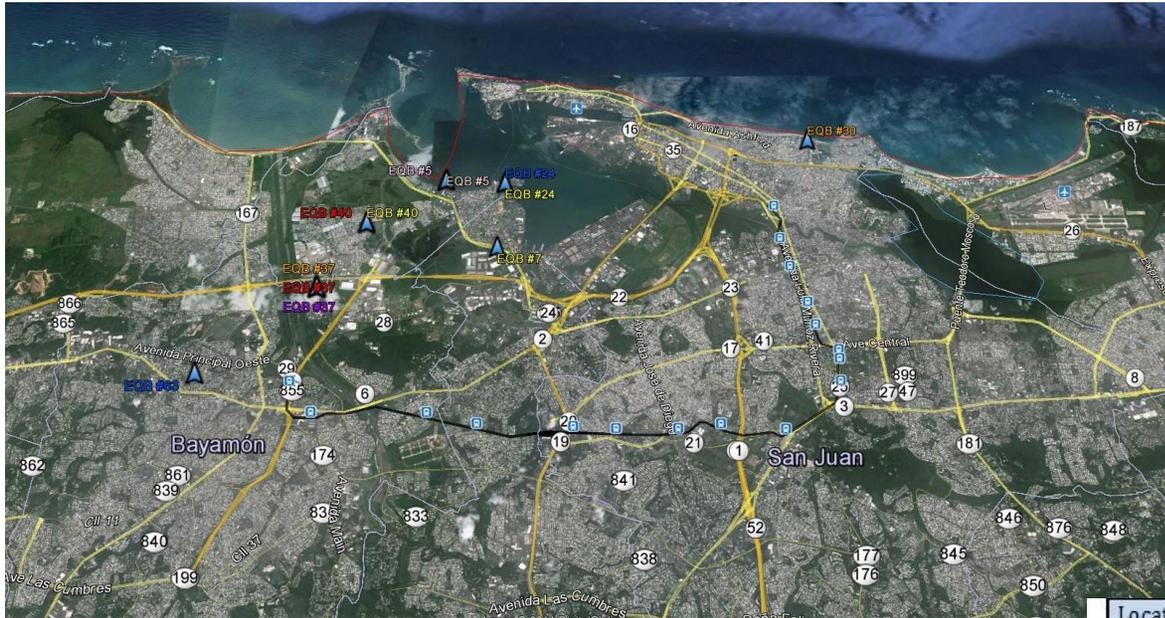
PREQB don't propose changes to the PM Sulfate network.

4.9 NCore – Air Monitoring Network

For Puerto Rico is required to operate at least one NCore site. According with the requirements, PREQB selected the AIRS 72-021-0010 site at Bayamón to establish the NCore.

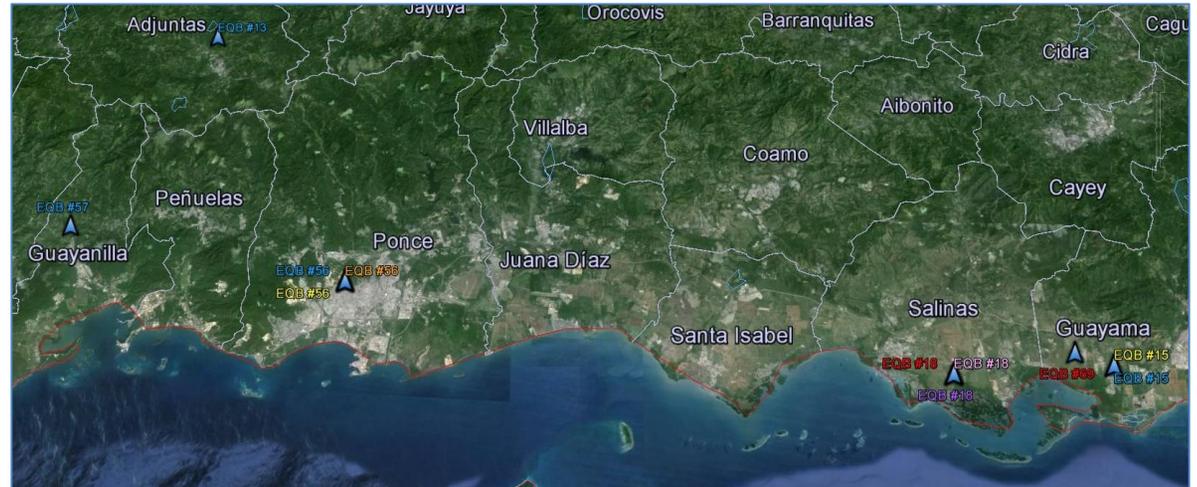
PREQB in coordination with EPA will be continued with the installation of the new station at Bayamon area as proposed during the 2012-2013 fiscal year and plans for action in the year ahead. The sites were proposed in the Network Plan 2012 and approved by EPA. PREQB is waiting for installation and operation from EPA.

Figure 1: San Juan Area



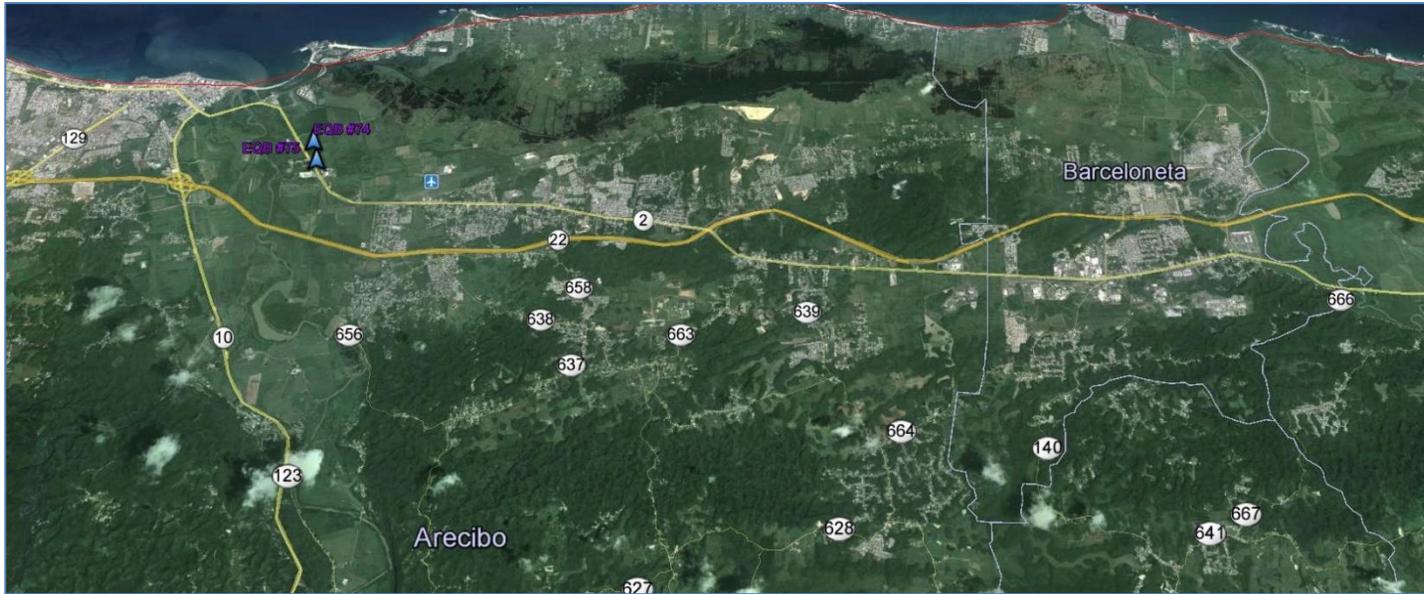
Location	ID	Parameter	Objective	Scale
Cataño	EQB 5	Ozone	population	urban
		NO ₂	population	urban
Cataño	EQB 40	PM _{2.5} AQI (new)	population	neighborhood
		SO ₂	population	urban
		PM ₁₀ AQI	population	urban
Bayamon	EQB 63	PM _{2.5}	population	neighborhood
Guaynabo	EQB 7	PM ₁₀	Highest concentration	micro
Guaynabo	EQB 24	PM ₁₀	population	neighborhood
		PM _{2.5}	population	neighborhood
		PM ₁₀ QA	population	neighborhood
		PM _{2.5} QA	population	neighborhood
San Juan	EQB 30	PM _{2.5}	population	neighborhood
		PM _{2.5} QA	population	neighborhood
		CO	unknown	middle

Figure 2: Ponce Area



Location	ID	Parameter	Objective	Scale
Ponce	EQB 56	PM ₁₀	Highest concentration	neighborhood
		PM _{2.5}	population	neighborhood
		CO	population	neighborhood
		PM ₁₀ AQI	population	neighborhood
		PM _{2.5} AQI (new)	population	neighborhood
Guayanilla	EQB 57	PM _{2.5}	population	neighborhood
Salinas	EQB 18	SO ₂	Source oriented	neighborhood
		Pb	Source oriented	neighborhood
		Met		
		NO ₂ (new)		
Guayama	EQB 69	SO ₂	Source oriented	neighborhood
Guayama	EQB 15	PM ₁₀	unknown	neighborhood
		PM _{2.5}	population	neighborhood
		PM ₁₀ QA	unknown	neighborhood
Adjuntas	EQB 13	PM _{2.5}	Upwind background	urban

Figure 3: Arecibo Area



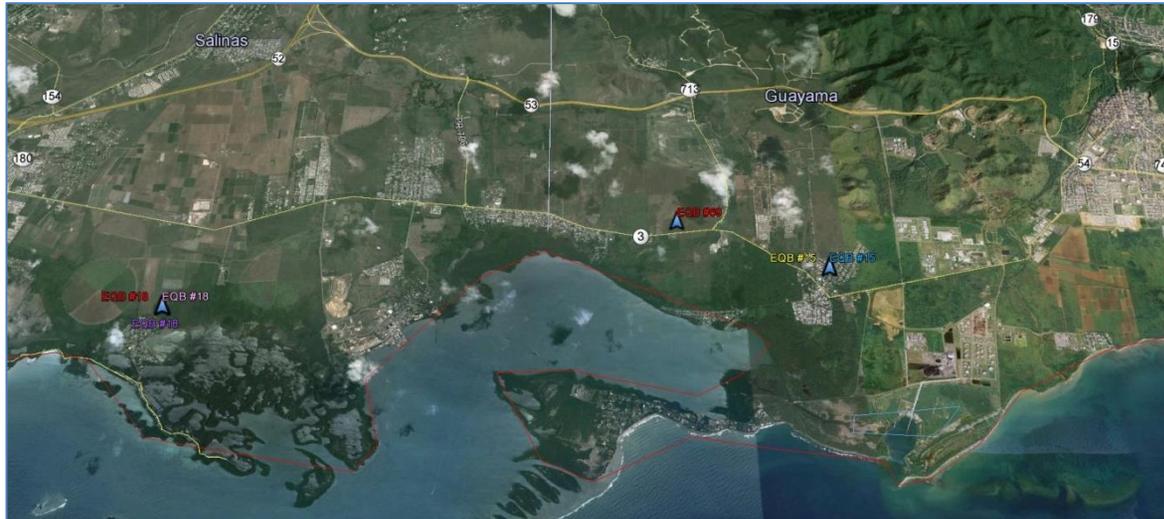
Location	ID	Parameter	Objective	Scale
Arecibo	EQB 74	Pb	Source oriented	micro
		Pb QA	Source oriented	micro
Arecibo	EQB 75	Pb	Source oriented	micro
Barceloneta	EQB 39	PM _{2.5} AQI	population	neighborhood

Figure 4: Fajardo Area



Location	ID	Parameter	Objective	Scale
Juncos	EQB 8	Ozone	population	neighborhood
		SO ₂	population	neighborhood
Humacao	EQB 53	PM _{2.5}	population	neighborhood
Fajardo	EQB 22	PM _{2.5}	Regional transport	regional
		PM ₁₀	General background	urban

Figure 5: Guayama-Salinas Area



Location	ID	Parameter	Objective	Scale
Ponce	EQB 56	PM ₁₀	Highest concentration	neighborhood
		PM _{2.5}	population	neighborhood
		CO	population	neighborhood
		PM ₁₀ AQI	population	neighborhood
		PM _{2.5} AQI (new)	population	neighborhood
Guayanilla	EQB 57	PM _{2.5}	population	neighborhood
Salinas	EQB 18	SO ₂	Source oriented	neighborhood
		Pb	Source oriented	neighborhood
		Met		
		NO ₂ (new)		
Guayama	EQB 69	SO ₂	Source oriented	neighborhood
Guayama	EQB 15	PM ₁₀	unknown	neighborhood
		PM _{2.5}	population	neighborhood
		PM ₁₀ QA	unknown	neighborhood
Adjuntas	EQB 13	PM _{2.5}	Upwind background	urban

5.0 NETWORK MODIFICATION FORMS

Network modification forms will be prepared for submittal to EPA Region II to implement the network modifications identified in this network plan.

6.0 SUMMARY AND CONCLUSIONS

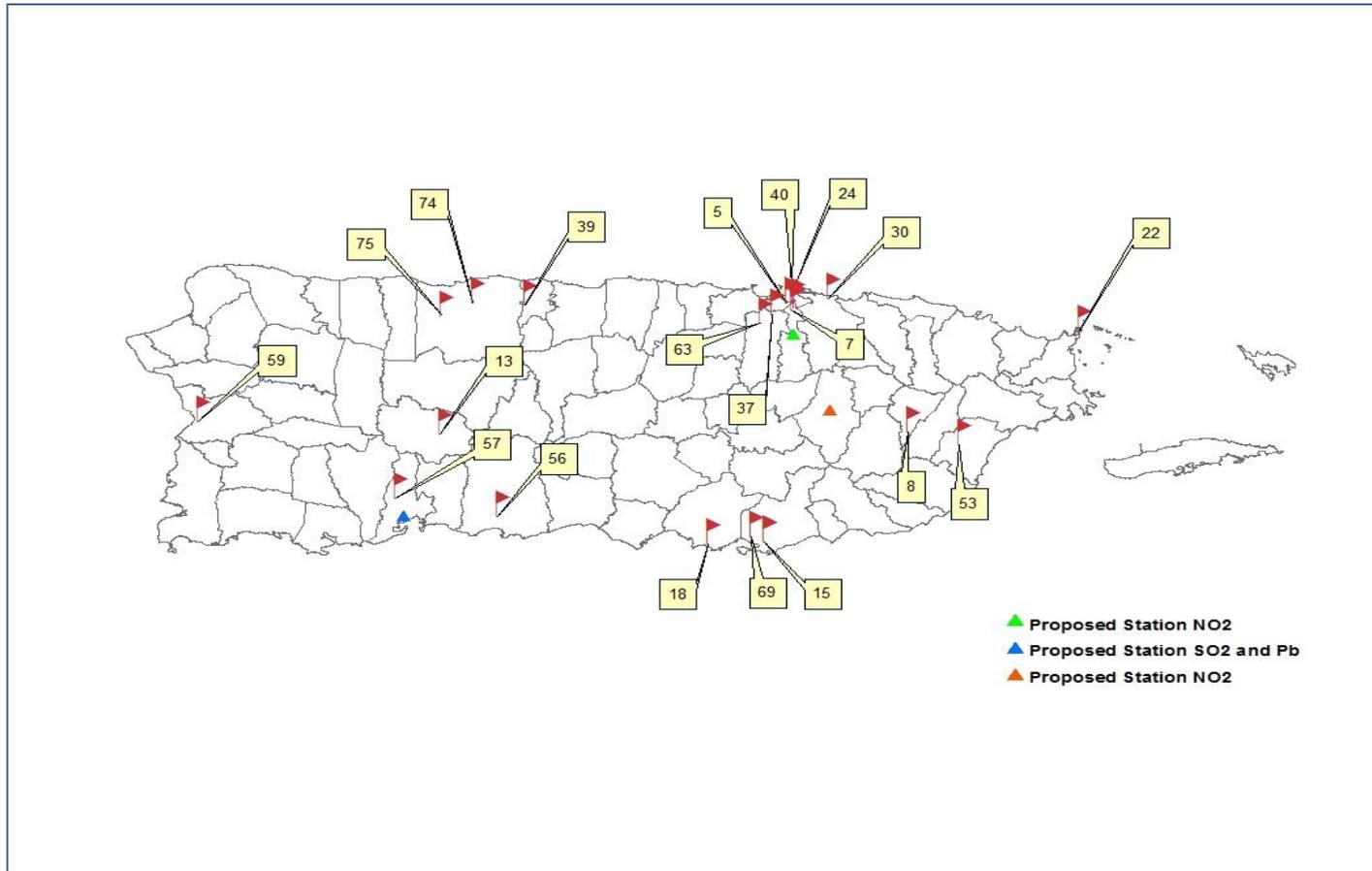
The monitoring requirements identified by federal regulation are currently met with the existing monitoring network in Puerto Rico. The procedures that are being used and the instruments that are being operated meet the standards that have been established by EPA.

The significant network changes proposed through 2014-15 include:

- Establish one new TSP lead filter sampling with atomic emission spectrometry analysis to generate ambient lead concentrations at Guayanilla.
- Establish the PM_{2.5} Speciation Site at NCore site.
- Begin the NCore site at AIRS Number 72-021-0006 at Bayamón.
- Reactive the NO₂ monitor 72-123-0002 located at Salinas's municipality.
- Relocate the SO₂ monitor located at Juncos to Guayanilla new site approved by EPA in the Network Plan 2012
- Establish the near road NO₂ new sites (Buchanan, Caguas)
- Replace some exiting PM_{2.5} SLAMS sites operating filters-based FRMS with continuous FEMS and one PM_{2.5} at the Buchanan station near-road with the NO₂ and CO. Also, two (2) monitors will be located at Cataño and Ponce as part of the AQI report
- Located a new CO monitor at the Buchanan station near-road with NO₂ and PM_{2.5} monitors required in CBSAs of 2.5 million or more persons.

Appendix 1: Site Description.

Figure 6: Map: Air Monitoring Network 2014-15



Puerto Rico Air Monitoring Network Plan

Site Name	EQB #13
Address	Road #123
City	Adjuntas
AQS Code	72-001-0002
PR County	Adjuntas
MSA/CSA	N/A
Latitude	+18.17537759
Longitude	-66.72598803
Suitable for Comparison to PM _{2.5} NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Ambient Average Temperature		Electronic	1 in 3	Urban		2005/01/01
Sample Average Barometric Pressure		Barometric Sensor	1 in 3	Urban		2005/01/01
PM _{2.5}	R&P Model 2025	Gravimetric	1 in 3	Urban	Upwind Background	2005/01/01

Parameter	Monitor Type
PM _{2.5}	SLAMS

Site Purpose	Reference for Extreme downwind
Plans for the next 18 months	No changes
Other comments	

Site Name	EQB #74
Address	Victor Santoni Cordero Road #123
City	Arecibo
AQS Code	72-013-0001
PR County	Arecibo
MSA/CSA	N/A
Latitude	+18.45703907
Longitude	-66.69669257
Suitable for Comparison to PM _{2.5} NAAQS?	n/a

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Ambient Temperature Average			1 in 6			
Ambient Pressure Average			1 in 6			
Lead TSP	Hi-Vol	Atomic Emission Spectrometry	1 in 6	Micro Scale	Source Oriented	2010/01/01

Parameter	Monitor Type
Lead	SLAMS

Site Purpose	Reference for Extreme downwind
Plans for the next 18 months	No changes
Other comments	Pb collocated

Site Name	EQB #75
Address	PR Road #2
City	Arecibo
AQS Code	72-013-0002
PR County	Arecibo
MSA/CSA	N/A
Latitude	+18.45338923
Longitude	-66.69498698
Suitable for Comparison to PM _{2.5} NAAQS?	n/a

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Ambient Temperature Average			1 in 6			
Ambient Pressure Average			1 in 6			
Lead TSP	Hi-Vol	Atomic Emission Spectrometry	1 in 6	Micro Scale	Source Oriented	2012/08/19

Parameter	Monitor Type
Lead	SLAMS

Site Purpose	Reference for Extreme downwind
Plans for the next 18 months	No changes
Other comments	

Site Name	EQB #39
Address	Centro Comunal Tiburones
City	Barceloneta
AQS Code	72-017-0003
PR County	Barceloneta
MSA/CSA	Arecibo-Manatí
Latitude	+18.43676361
Longitude	-66.58001971
Suitable for Comparison to PM _{2.5} NAAQS?	No

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
PM _{2.5} (88501)	PM _{2.5} wins w/correction factor	TEOM	Continuous	Neighborhood	Population Exposure	2000/04/10

Parameter	Monitor Type
PM _{2.5} (88501)	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	Temporary Shutdown
Other comments	

Site Name	EQB #37
Address	Regional Jail of Bayamón
City	Bayamón
AQS Code	72-021-0010
PR County	Bayamón
MSA/CSA	San Juan - Bayamón
Latitude	+18.42008912
Longitude	-66.1506155
Suitable for Comparison to PM _{2.5} NAAQS?	N/A

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Sulfur Dioxide	Instrumental	Pulsed Fluorescent	Continuous	Neighborhood	Population Exposure	2011/03/16
Carbon Monoxide	Instrumental	Non Dispersive Infrared	Continuous	Neighborhood	Population Exposure	2011/03/16
Lead TSP	Hi-Vol	Atomic Emission Spectrometry	1 in 6	Neighborhood	Population Exposure	2011/03/22

Parameter	Monitor Type
Sulfur Dioxide	SLAMS
Carbon Monoxide	SLAMS
Lead TSP	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	The NCore site waiting for install operation by EPA contractor
Other comments	As part of NCore will be establish PM _{2.5} speciation monitor

Site Name	EQB #63
Address	Escuela Juan Morell Campos – Villa Rica
City	Bayamón
AQS Code	72-021-0009
PR County	Bayamón
MSA/CSA	San Juan - Bayamón
Latitude	+18.39982013
Longitude	-66.17112511
Suitable for Comparison to PM _{2.5} NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Ambient Average Temperature		Electronic	1 in 3	Urban	Extreme Downwind	
Sample Average Barometric Pressure		Barometric Sensor	1 in 3	Urban	Extreme Downwind	
PM _{2.5}	R&P Model 2025	Gravimetric	1 in 3	Urban	Extreme Downwind	1999/02/02

Parameter	Monitor Type
PM _{2.5}	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	No changes
Other comments	

Site Name	EQB #40
Address	11 Final St. Las Vegas
City	Cataño
AQS Code	72-033-0004
PR County	Cataño
MSA/CSA	San Juan - Bayamón
Latitude	+18.43120758
Longitude	-66.14168262
Suitable for Comparison to PM _{2.5} NAAQS?	N/A

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Sulfur Dioxide	Instrumental	Pulsed Fluorescent	Continuous	Neighborhood	Population Exposure	1993/12/07
PM ₁₀	R&P SA246B	Continuous	Urban	Population exposure	TEOM-AQI	2000/07/13
PM _{2.5}	R&P SA246B	Continuous	Urban	Population Exposure	TEOM- AQI	New

Parameter	Monitor Type
Sulfur Dioxide	SLAMS
PM ₁₀	SLAMS
PM _{2.5}	SLAMS (new)

Site Purpose	Protection for the population
Plans for the next 18 months	New PM _{2.5} FEM continuous monitor
Other comments	AQI (PM ₁₀ , PM _{2.5})

Site Name	EQB #5
Address	PR Rd. 165
City	Cataño
AQS Code	72-033-0008
PR County	Cataño
MSA/CSA	San Juan - Bayamón
Latitude	+18.4407744
Longitude	-66.12653082
Suitable for Comparison to PM _{2.5} NAAQS?	NO

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Ozone	Instrumental	Ultra Violet	Continuous	Urban	Population exposure	2004/07/22
PM _{2.5} (88501)	PM _{2.5} wins w/correction factor	TEOM	Continuous	Neighborhood	Population exposure	2004/06/30
Nitrogen Dioxide	Instrumental	Chemiluminescence's	Continuous	Urban	Population exposure	2004/10/21

Parameter	Monitor Type
Ozone	SLAMS
PM _{2.5} (88501)	SLAMS
Nitrogen Dioxide	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	No changes
Other comments	

Site Name	EQB #22
Address	Fajardo Lighthouse
City	Fajardo
AQS Code	72-053-0003
PR County	Fajardo
MSA/CSA	Humacao - Fajardo
Latitude	+18.38398349
Longitude	-66.61888794
Suitable for Comparison to PM _{2.5} NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
PM _{2.5}	R&P Model 2025	Gravimetric	1 in 3	Regional	Regional Transport	1999/04/20
PM ₁₀	Hi-Vol	Gravimetric	1 in 1	Neighborhood	Background	1989/03/05
PM ₁₀ Sulfate	Colorimetric		1 in 6	Neighborhood	Background	1998/01/05

Parameter	Monitor Type
PM _{2.5}	SLAMS
PM ₁₀	SLAMS
PM ₁₀ Sulfate	SLAMS

Site Purpose	Reference and Background
Plans for the next 18 months	No changes
Other comments	PM _{2.5} temporary shutdown

Appendix 1: Site Description

Site Name	EQB #15
Address	Barrio Jobos, Intersection Highway 3 & 707
City	N/A
AQS Code	72-057-0008
PR County	Guayama
MSA/CSA	Guayama
Latitude	+17.95789438
Longitude	-66.16501599
Suitable for Comparison to PM _{2.5} NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
PM _{2.5}	R&P Model 2025	Gravimetric	1 in 3	Neighborhood	Population Exposure	1999/01/15
PM ₁₀	Hi-Vol	Gravimetric	1 in 3	Neighborhood	Population Exposure	1988/10/06
PM ₁₀ Sulfate	Hi-Vol	Colorimetric	1 in 6	Neighborhood	Population Exposure	1998/01/05

Parameter	Monitor Type
PM _{2.5}	SLAMS
PM ₁₀	SLAMS
PM ₁₀ Sulfate	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	No changes
Other comments	PM ₁₀ collocated monitor

Appendix 1: Site Description

Site Name	EQB #69
Address	At the south side of the police station
City	Guayama
AQS Code	72-057-0009
PR County	Guayama
MSA/CSA	Guayama
Latitude	+17.96763771
Longitude	-66.18747065
Suitable for Comparison to PM _{2.5} NAAQS?	N/A

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Sulfur Dioxide	Instrumental	Pulsed Fluorescence	Continuous	Neighborhood	Source Oriented	2001/11/14

Parameter	Monitor Type
Sulfur Dioxide	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	No changes
Other comments	

Appendix 1: Site Description

Site Name	EQB #57
Address	Road 377 Bo. Quebrada
City	Guayanilla
AQS Code	72-059-0016
PR County	Guayanilla
MSA/CSA	Ponce
Latitude	+18.0451106
Longitude	-66.80225307
Suitable for Comparison to PM _{2.5} NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Ambient Average Temperature		Electronic	1 in 3			
Sample Average Barometric Pressure		Barometric Sensor	1 in 3			
PM _{2.5}	R&P Model 2025	Gravimetric	1 in 3	Neighborhood	Population Exposure	1999/01/15

Parameter	Monitor Type
PM _{2.5}	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	No changes
Other comments	

Appendix 1: Site Description

Site Name	EQB # (new)
Address	
City	Guayanilla
AQS Code	72-059-0001
PR County	Guayanilla
MSA/CSA	Ponce
Latitude	
Longitude	
Suitable for Comparison to PM _{2.5} NAAQS?	N/A

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Sulfur Dioxide	Instrumental	Pulsed Fluorescent	Continuous	Neighborhood	Source Oriented	new
Lead TSP	Hi- Vol	Atomic Absorption	1 in 6	Micro Scale	Population Exposure	new
Ambient Temperature Average			1 in 6			
Ambient Pressure Average			1 in 6			

Parameter	Monitor Type
Sulfur Dioxide	SLAMS
Lead TSP	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	New Site
Other comments	Near South Coast PREPA

Appendix 1: Site Description

Site Name	EQB #7
Address	USGS & Water Resources Bldg.
City	Guaynabo
AQS Code	72-061-0001
PR County	Guaynabo
MSA/CSA	San Juan - Bayamón
Latitude	+18.42565192
Longitude	-66.11584553
Suitable for Comparison to PM _{2.5} NAAQS?	No

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
PM ₁₀	Hi-Vol	Gravimetric	1 in 3	Micro Scale	Highest Concentration	1999/02/28
PM ₁₀ Sulfate	Hi-Vol	Colorimetric	1 in 6	Neighborhood	Population Exposure	1999/02/28

Parameter	Monitor Type
PM ₁₀	SLAMS
PM ₁₀ Sulfate	SLAMS

Site Purpose	Determine Highest Concentration
Plans for the next 18 months	No changes
Other comments	PM ₁₀ Monitor is part of PM ₁₀ SIP for Guaynabo LMP

Appendix 1: Site Description

Site Name	EQB #24
Address	Electrical Substation
City	Guaynabo
AQS Code	72-061-0005
PR County	Guaynabo
MSA/CSA	San Juan - Bayamón
Latitude	+18.44009541
Longitude	-66.11445975
Suitable for Comparison to PM _{2.5} NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
PM _{2.5}	R&P Model 2025	Gravimetric	1 in 3	Neighborhood	Population Exposure	1999/01/15
PM ₁₀	Hi-Vol	Gravimetric	1 in 1	Neighborhood	Population Exposure	1988/01/05
PM ₁₀ Sulfate	Hi-Vol	Colorimetric	1 in 6	Neighborhood	Population Exposure	1998/01/05

Parameter	Monitor Type
PM _{2.5}	SLAMS
PM ₁₀	SLAMS
PM ₁₀ Sulfate	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	No changes
Other comments	PM ₁₀ Monitor is part of PM ₁₀ SIP for Guaynabo LMP, PM _{2.5} collocated monitor, PM ₁₀ collocated monitor

Appendix 1: Site Description

Site Name	EQB #53
Address	Gladiola & Girasol St. V́ctor Rincón School, Barrio Junquito
City	Humacao
AQS Code	72-069-0001
PR County	Humacao
MSA/CSA	Fajardo - Humacao
Latitude	+18.15343985
Longitude	-65.82861683
Suitable for Comparison to PM _{2.5} NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Ambient Average Temperature		Electronic	1 in 3			
Sample Average Barometric Pressure		Barometric Sensor	1 in 3			
PM _{2.5}	R&P Model 2025	Gravimetric	1 in 3	Neighborhood	Population Exposure	2000/02/12

Parameter	Monitor Type
PM _{2.5}	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	No changes
Other comments	

Appendix 1: Site Description

Site Name	EQB #59
Address	Nenadich Street
City	Mayagüez
AQS Code	72-097-0006
PR County	Mayagüez
MSA/CSA	Mayagüez
Latitude	+18.20009892
Longitude	-67.14587984
Suitable for Comparison to PM _{2.5} NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Ambient Average Temperature		Electronic	1 in 3			
Sample Average Barometric Pressure		Barometric Sensor	1 in 3			
PM _{2.5}	R&P Model 2025	Gravimetric	1 in 3	Neighborhood	Source Oriented	2007/02/21

Parameter	Monitor Type
PM _{2.5}	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	No changes
Other comments	

Appendix 1: Site Description

Site Name	EQB #8
Address	Road 183
City	Juncos
AQS Code	72-077-0001
PR County	Juncos
MSA/CSA	Juncos
Latitude	+18.17793873
Longitude	-65.91548245
Suitable for Comparison to PM _{2.5} NAAQS?	N/A

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Sulfur Dioxide	Instrumental	Pulsed Fluorescent	Continuous	Neighborhood	Population Exposure	2007/10/03
Ozone	Instrumental	Ultra violet	Continuous	Neighborhood	Population Exposure	2007/10/03

Parameter	Monitor Type
Sulfur Dioxide	SLAMS
Ozone	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	The SO ₂ monitor will be relocated to Guayanilla new site.
Other comments	Meteorological monitor.

Appendix 1: Site Description

Site Name	EQB #56
Address	Civil Defense Bldg. Urb. San Antonio
City	Ponce
AQS Code	72-113-0004
PR County	Ponce
MSA/CSA	Ponce
Latitude	+18.00955831
Longitude	-66.62724916
Suitable for Comparison to PM _{2.5} NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
PM _{2.5}	R&P Model 2025	Gravimetric	1 in 3	Neighborhood	Population Exposure	1999/01/15
PM ₁₀	Hi-Vol	Gravimetric	1 in3	Neighborhood	High Concentration	1999/01/06
Carbon Monoxide	Instrumental	Non Dispersive Infrared	Continuous	Neighborhood	Population Exposure	2011/10/01
PM ₁₀ continuous	R&P SA246B	Continuous	Continuous	Neighborhood	TEOM-AQI	2011/10/05

Parameter	Monitor Type
PM _{2.5}	SLAMS
PM ₁₀	SLAMS
CO	SLAMS
PM ₁₀ -continuous	SLAMS

Site Purpose	Determine High Concentration
Plans for the next 18 months	PM _{2.5} FRM monitor will be change to PM _{2.5} FEM continuous monitor also to be use to AQI purposes.
Other comments	

Appendix 1: Site Description

Site Name	EQB #18
Address	Road Las Mareas
City	Salinas
AQS Code	72-123-0002
PR County	Salinas
MSA/CSA	Ponce
Latitude	+17.95300579
Longitude	-66.26146111
Suitable for Comparison to PM _{2.5} NAAQS?	N/A

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Sulfur Dioxide	Instrumental	Pulsed Fluorescent	Continuous	Neighborhood	Population Oriented	2008/09/24
NO ₂						new
Lead TSP	Hi-Vol	Atomic Emission Spectrometry	1 in 6	Micro Scale	Source Oriented	2011/10/18

Parameter	Monitor Type
Sulfur Dioxide	SLAMS

Site Purpose	Protection for the population
Plans for the next 18 months	Proposed a NO ₂ monitor
Other comments	Meteorological monitor

Appendix 1: Site Description

Site Name	EQB #30
Address	Baldorioty de Castro Ave.
City	San Juan
AQS Code	72-127-0003
PR County	San Juan
MSA/CSA	San Juan- Bayamón
Latitude	+18.4498145
Longitude	-66.05250955
Suitable for Comparison to PM _{2.5} NAAQS?	Yes

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
Ambient Average Temperature		Electronic	1 in 3			
Sample Average Barometric Pressure		Barometric Sensor	1 in 3			
PM _{2.5}	R&P Model 2025	Gravimetric	1 in 3	Neighborhood	Population Exposure	1999/03/21
Carbon Monoxide	Instrumental	Non Dispersive Infrared	Continuous	Neighborhood	High Concentration	1995/04/01

Parameter	Monitor Type
PM _{2.5}	SLAMS
Carbon Monoxide	SLAMS

Site Purpose	Determine High Concentration and protection of population
Plans for the next 18 months	Not changes, PM _{2.5} temporary shutdown
Other comments	PM _{2.5} collocated monitor

Appendix 1: Site Description

Site Name	EQB # NEW
Address	Buchanan (Metropista)
City	Guaynabo
AQS Code	72-061-
PR County	San Juan
MSA/CSA	San Juan- Bayamón
Latitude	
Longitude	
Suitable for Comparison to PM _{2.5} NAAQS?	No

Parameter	Sampling Method	Analysis Method	Schedule	Spatial Scale	Monitoring Objective	Date Established
PM _{2.5}						
Carbon Monoxide						
NO ₂						

Parameter	Monitor Type
PM _{2.5}	SLAMS
Carbon Monoxide	SLAMS
NO ₂	SLAMS

Site Purpose	Near Road
Plans for the next 18 months	New
Other comments	