

NMED

New
Mexico
Environment
Department



Air Quality Bureau

2020 Annual Network

Review

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**2020 Network Review
Air Quality Bureau
New Mexico Environment Department
July 1, 2020**

**Prepared by
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The purpose of this document is to provide information concerning the operation of the ambient air monitoring network by the New Mexico Environment Department (NMED) Air Quality Bureau (AQB) in Fiscal Year 2020 which covers the period from July 1, 2019 through June 30, 2020.

Introduction

In October 2006, US EPA issued final regulations concerning state and local agency ambient air monitoring networks. Under 40 CFR, Part 58, Subpart B, States are required to submit an annual monitoring network review to the Environmental Protection Agency (EPA) regional office in Dallas, Texas. These regulations require states to submit an annual monitoring network review to US EPA. This network plan is required to provide the framework for establishment and maintenance of an air quality surveillance system and to list any changes that are proposed to take place to the current network during the 2020 Fiscal Year. The annual monitoring network review must be made available for public inspection for at least 30 days prior to submission to EPA.

1.0 Overview

At the end of the state fiscal year June 30, 2020, the Bureau continued operating the 20 criteria air pollutant monitoring sites located in 11 of the State's 33 counties. Each air monitoring location is sited to meet the three basic monitoring objectives and at least one of the six federal criteria of: NO₂, O₃, CO, Lead, particulate matter (PM₁₀ and PM_{2.5}), and SO₂ for ambient air monitoring networks.

In 2020 the Ambient Air Monitoring Section currently has a full-time staff of seven during FY 2020.

Table 1 (Network Element Worksheet) contains the listing of all New Mexico Environment Department, Air Quality Bureau ambient air monitoring sites operating at the end of the state fiscal year 2020.

Site Designation Coding

The NMED-Air Quality Bureau's 20 air monitoring stations each have their own state region designation identified with a numeric-alpha code and site name (i.e. 1ZB Bloomfield). The number and name represent the state's Air Quality Control Region and the letter(s) identifies the site followed by the name of the site. In addition, each site has a numeric AQS (Air Quality System) identifier code which is based on EPA's state, county and site ID (i.e. 35-045-1005) designation. The first two numbers identify the state (New Mexico is 35), the second set of three numbers refers to the county where the monitoring site is located. The third set of four numbers is the monitoring site ID number.

Figure 1 on page 6 shows the state and EPA air regions. The table below is a complete listing of all 20 air monitoring sites designation code, both state and EPA throughout the network.

<u>NMED Site Designation</u>	<u>EPA - AQS Number Designation</u>
1H - Sub Station	35-045-1005
1ZB - Bloomfield	35-045-0009
1NL - Navajo Lake	35-045-0018
2LL - Los Lunas	35-061-0008
2ZJ - Bernalillo	35-043-1001
3CRD - Coyote Ranger District	35-039-0026
3SFA - Santa Fe Airport	35-049-0021
3ZD - Taos	35-055-0005
5ZR - Carlsbad	35-015-1005
5ZS - Hobbs Jefferson	35-025-0008
6CM - Anthony	35-013-0016
6O - La Union	35-013-0008
6Q - Las Cruces Office	35-013-0025
6WM - West Mesa	35-013-0024
6ZL - Holman Road	35-013-0019
6ZK - Chaparral	35-013-0020
6ZM - Desert View	35-013-0021
6ZN - Santa Teresa	35-013-0022
6ZQ - Solano	35-013-0023
7E - Deming Airport	35-029-0003

Air Monitoring Network

NMED-AQB regulates air quality to protect public health and the environment in the State of New Mexico, excluding Bernalillo County. Air monitoring data are required by regulation and are used to determine compliance with U.S. EPA's NAAQS. Other important uses of the air monitoring data include the production of a daily Air Quality Index (AQI), daily air quality forecast report, support of short and long-term health risk assessments, identification of localized health concerns, and tracking long-term trends in air quality. New Mexico monitors four of the six NAAQS criteria pollutants: NO₂, O₃, particulate matter (PM₁₀ and PM_{2.5}), and SO₂. NMED-AQB does not monitor for CO or Lead as New Mexico currently does not meet the criteria for monitoring these pollutants.

Air Quality Data

Overview of Monitored Parameters – Criteria Pollutants

Nitrogen Dioxide (NO₂)

NO₂ is a highly toxic, reddish brown gas that is created primarily from fuel combustion in industrial sources and vehicles. It creates an odorous haze that causes eye and sinus irritation, blocks natural sunlight, and reduces visibility.

Ozone (O₃)

Ground-level O₃, also known as photochemical smog, is not emitted into the atmosphere as ozone, but rather is formed by the reactions of other pollutants. The primary pollutants entering this reaction, VOC's and oxides of nitrogen, create ozone in the presence of sunlight. Ozone is a strong irritant of the upper respiratory system and causes damage to crops.

Sulfur Dioxide (SO₂)

SO₂ is a gaseous pollutant that is emitted primarily by industrial furnaces or power plants burning coal or oil containing sulfur. At high concentrations, breathing can be impaired. Damage to vegetation can also result.

Fine Particulate Matter (PM_{2.5})

Fine particulate matter with a diameter of 2.5 microns or less is created primarily from industrial processes and fuel combustion. These particles are breathed deep into the lungs. Exposure to particle pollution is linked to a variety of significant health problems ranging from aggravated asthma to premature death in people with heart and lung disease.

Particulate Matter (PM₁₀)

Particulate matter with a mean diameter of 10 microns or less is emitted from transportation and industrial sources. Exposure to particle pollution is linked to a variety of significant health problems ranging from aggravated asthma to premature death in people with heart and lung disease.

Meteorological Monitoring

NMED-AQB includes meteorological monitoring of the local area because the outcome of air pollutants is influenced by the movement and characteristics of the air mass into which they are emitted. If the air is calm and pollutants cannot disperse, then the concentration of these pollutants will build up. Conversely, if a strong and turbulent wind is blowing, the pollutant will rapidly disperse into the atmosphere and will result in lower concentrations near the pollution source. The measurements of wind speed and direction, temperature, humidity, rainfall, barometric pressure, ultraviolet radiation and solar radiation are important parameters used in the study of air quality monitoring results and to further understand the chemical reactions that occur in the atmosphere.

Monitoring Methodology

NMED-AQB air monitoring network uses Thermo Environmental Instruments i-Series for all gaseous monitoring. The Model 42i Chemiluminescence monitor collects NO/NO_x/NO₂ data, the Model 43i Pulsed Fluorescence monitor collects SO₂ data and the Model 49i UV Photometric

monitor collects Ozone data. For particulate matter sampling, NMED-AQB uses the Thermo Environmental Instruments 2025i Series Partisol FRM samplers. Three of the four 2025i samplers are PM_{2.5} designated and the fourth is designated as PM₁₀. NMED-AQB is also operating the BAM-1020 continuous particulate matter sampler, both PM₁₀ and PM_{2.5} after replacing the aging TEOM samplers. The BAM samplers allows for real time data as it provides particulate concentrations continuously. This also has the added benefit of letting the public know of high particulate events (via the Bureau’s web page) allowing citizens that may have respiratory health conditions to take necessary precautions.

2.0 Network Review by Pollutant and Respective Air Quality Control Regions

NMED-AQB has reviewed its current ambient air quality network and proposed changes to the network implemented during Fiscal Year 2020. Current NAAQS, data trends, siting concerns, site access concerns, and other monitoring issues all contribute to any proposed network revisions.

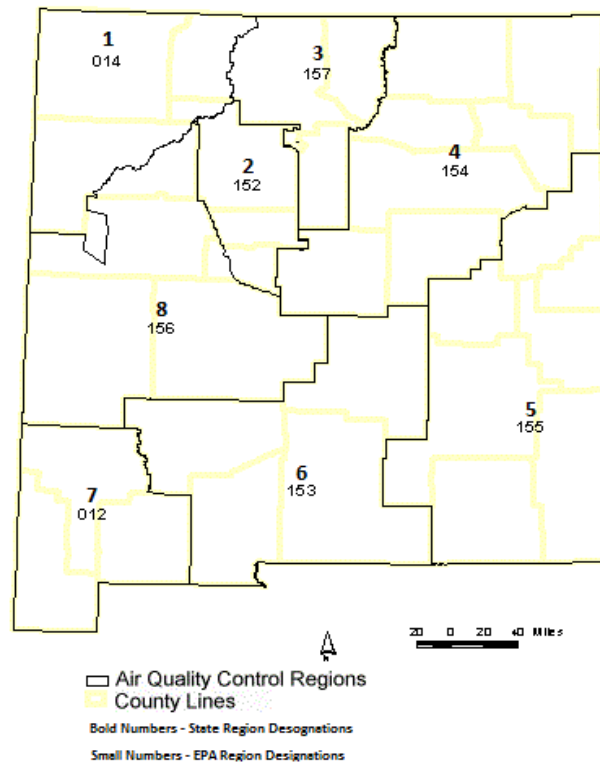
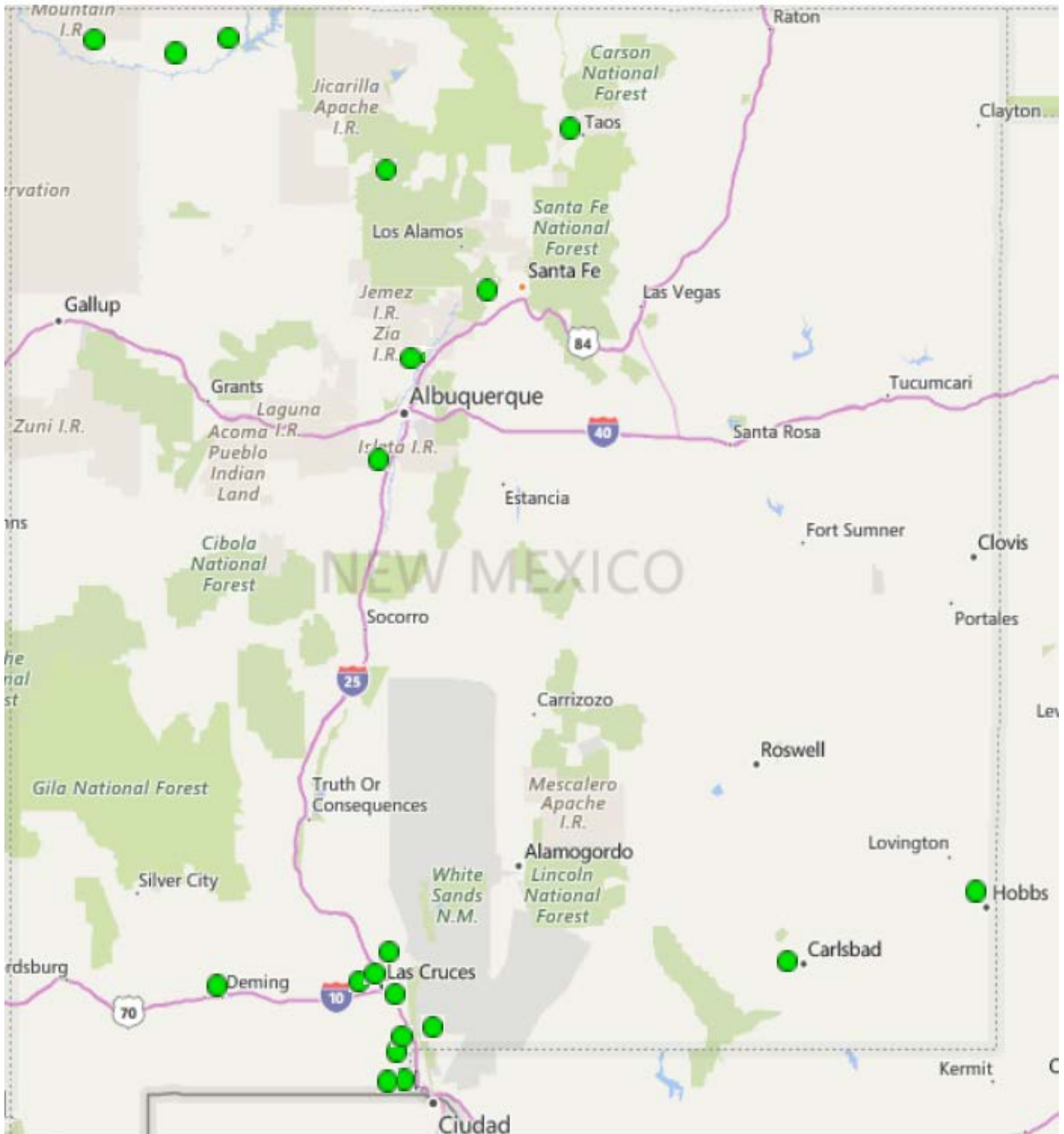


Figure 1

The Bureau’s air monitoring network for 2020 consists of the sites and monitors listed in Network Elements Spreadsheet. All site changes (if any) which have occurred or planned to take place in 2020 are included along with any network modifications for 2020. Figure - 1 above is an overview of the state’s and EPA’s designation of Air Quality Control Regions (AQCR’s). Figure - 2 on the next page depicts AQB’s current monitoring network and shows the locations of monitoring sites as of 2020. The number of monitoring locations operated by the State remained unchanged throughout the 20 sites.



Monitoring Network Locations
Figure 2

Population of Metropolitan Statistical Areas (MSA's)

<u>Albuquerque MSA</u> Albuquerque Metro	<u>Population</u> 918,018
<u>El Paso-Las Cruces MSA</u> Las Cruces Metro	<u>Population</u> 218,195
<u>Farmington MSA</u> Farmington Metro	<u>Population</u> 123,958
<u>Santa Fe MSA</u> Santa Fe Metro	<u>Population</u> 150,358
<u>Carlsbad-Artesia & Hobbs μSA</u> Carlsbad-Artesia Hobbs	<u>Population</u> 58,460 71,070
<u>Taos μSA</u> Taos Micro Area	<u>Population</u> 32,723
*NMED has no air monitoring stations in Bernalillo county due to the City of Albuquerque having its own monitoring group which covers the county.	
Above population statistics based on US Census Bureau 2019 data.	

Based on the most current population NMED's Air Quality Bureau meets the air monitoring network requirements set forth in 40 CFR Part 58 Appendices A through E.

2.1 Nitrogen Dioxide (NO₂)

The Bureau operates seven air monitoring sites in the network for Nitrogen Dioxide. Three in AQCR-1 which are in San Juan County, two in AQCR-5, one being in Eddy County and the second in Lea County and two in AQCR-6 both of which operate in Doña Ana County.

Nitrogen Dioxide (NO₂) Air Quality Control Region 1 (EPA Region 014)

The Bureau operates three air monitoring sites in AQCR-1 for Nitrogen Dioxide which are in San Juan County consisting of the Substation, Bloomfield, and Navajo Lake sites. Figure 3 indicates the location of the monitoring sites.

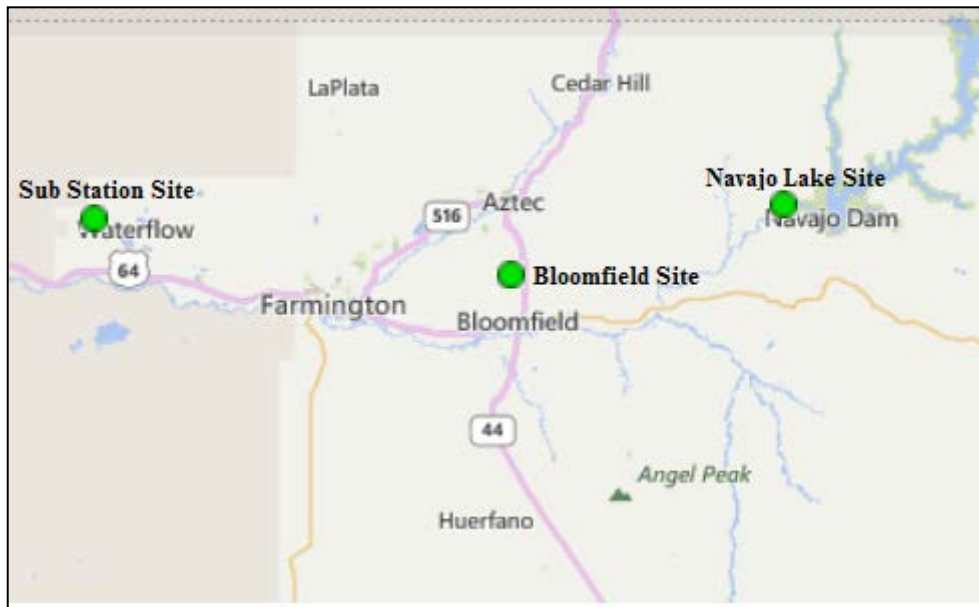


Figure 3

Substation Site AQS #: 35-045-1005:

Substation NO₂ Parameter 42602, Method 074, POC 2

The Bureau continues to operate the NO₂ monitor at the Substation air monitoring site. There were no changes implemented in 2020.

Bloomfield Site AQS #:35-045-0009:

Bloomfield NO₂ Parameter 42602, Method 074, POC 1

The Bureau continues to operate the NO₂ monitor at the Bloomfield air monitoring site. There were no changes implemented in 2020.

Navajo Lake Site AQS# 35-045-0018:

Navajo Lake NO₂ Parameter 42602, Method 074, POC 1

The Bureau continues to operate the NO₂ monitor at the Navajo Lake air monitoring site. There were no changes implemented in 2020.

Nitrogen Dioxide (NO₂) Air Quality Control Region 5 (EPA Region 155)

The Bureau operates two air monitoring sites in AQCR-5, located in Eddy County, and Lea County consisting of the Carlsbad and Hobbs sites. Figure 4 indicates the location of the monitoring sites.

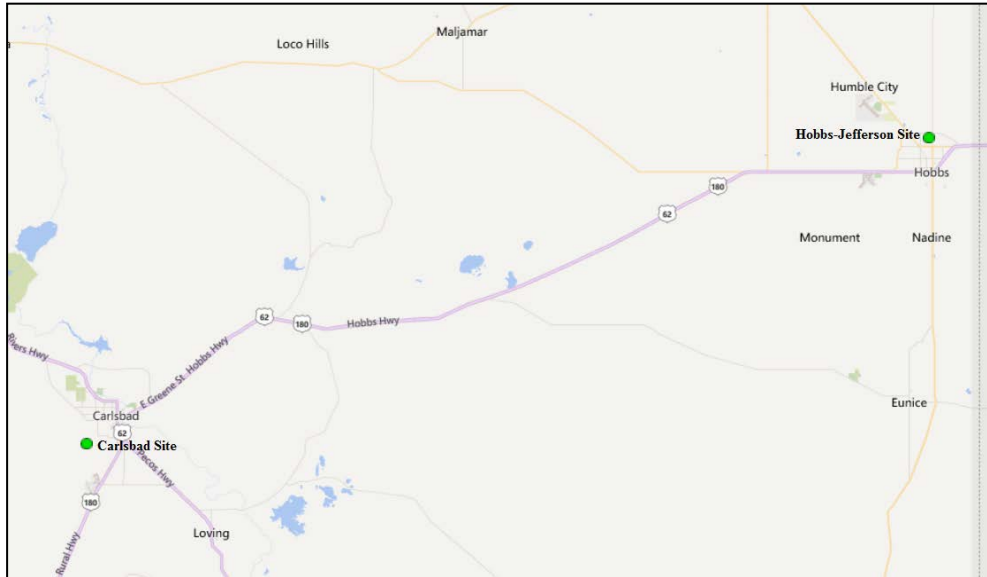


Figure 4

Carlsbad AQS #: 35-015-1005:

Carlsbad NO₂ Parameter 42602, Method 074, POC 1

The Bureau continues to operate the NO₂ monitor at the Carlsbad air monitoring site. There were no changes implemented in 2020.

Hobbs Jefferson AQS #: 35-025-0008:

Hobbs NO₂ Parameter 42602, Method 074, POC 1

The Bureau continues to operate the NO₂ monitor at the Hobbs air monitoring site. There were no changes implemented in 2020.

Nitrogen Dioxide (NO₂) Air Quality Control Region 6 (EPA Region 153)

The Bureau operates nine air monitoring sites in AQCR-6, located in Doña Ana County. Two of the nine monitoring sites, Desert View and Santa Teresa monitor for NO₂. Figure 5 indicates the location of the monitoring sites.

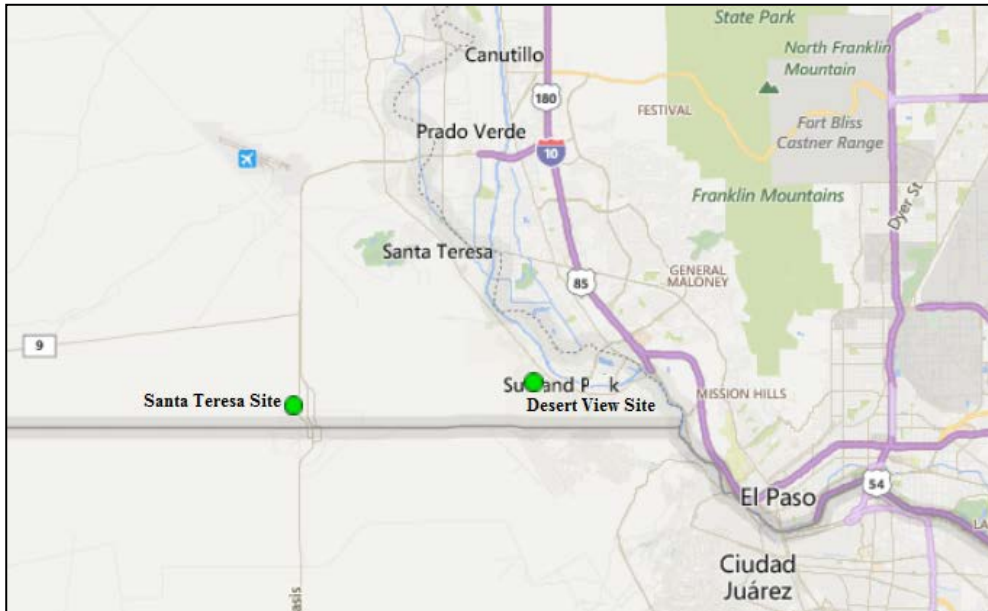


Figure 5

Desert View AQS #: 35-013-0021:

Desert View NO₂ Parameter 42602, Method 074, POC 1

The Bureau continues to operate the NO₂ monitor at the Desert View air monitoring site. There were no changes implemented in 2020.

Santa Teresa AQS #: 35-013-0022:

Santa Teresa NO₂ Parameter 42602, Method 074, POC 1

The Bureau continues to operate the NO₂ monitor at the Santa Teresa air monitoring site. There were no changes implemented in 2020.

2.2 Ozone (O₃)

The Bureau is continuing the operation of fourteen air monitoring sites in the network for Ozone, seven in northern New Mexico and seven in southern New Mexico. In the northern half of the state there are three sites in AQCR-1 which are in San Juan County, two sites in AQCR-2, one being in Sandoval County and the second in Valencia County, and two sites in AQCR-3, one in Santa Fe County and the second in Rio Arriba County. In the southern half of the state, there are two sites in AQCR-5, one in Lea County and the second in Eddy County and five sites in AQCR-6 which are in Doña Ana County. Figure 6 indicates the location of the northern monitoring sites and Figure 7 indicates the location of the southern monitoring sites.

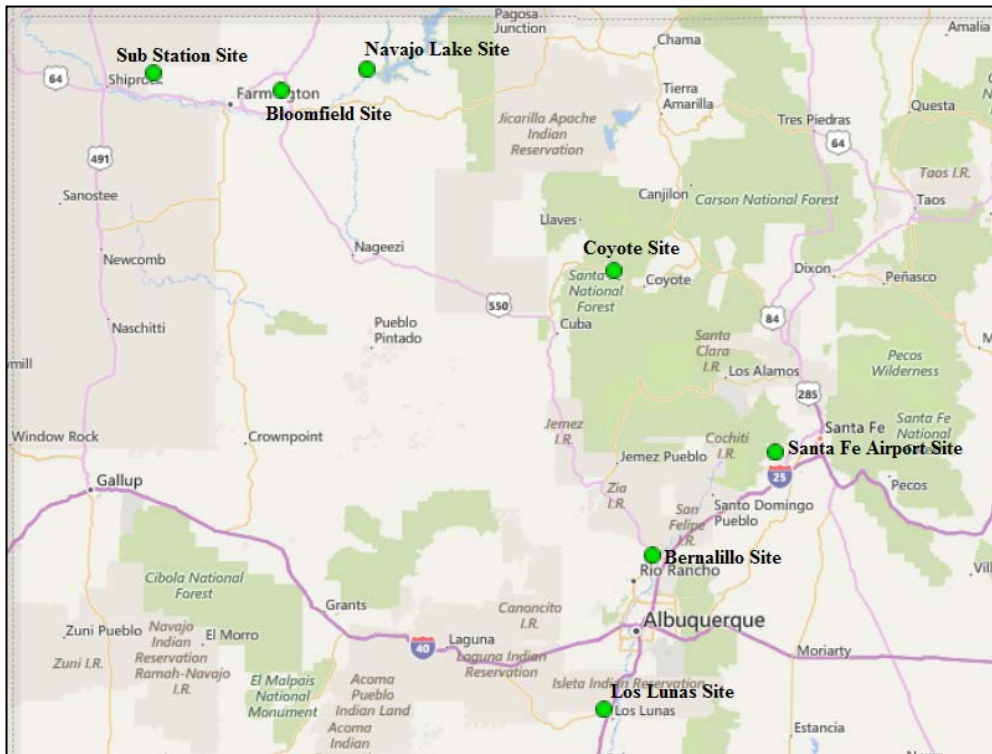


Figure 6



Figure 7

Ozone (O₃) Air Quality Control Region 1 (EPA Region 014)

The Bureau operates three air monitoring sites in AQCR-1 for Ozone which are in San Juan County consisting of the Substation, Bloomfield, and Navajo Lake sites. Figure 8 indicates the location of the monitoring sites.

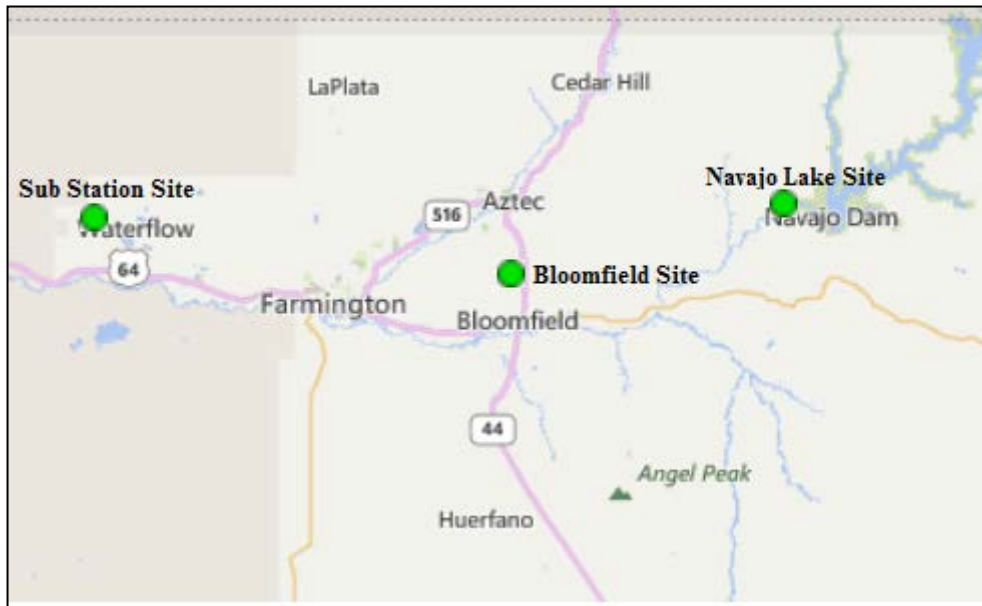


Figure 8

Substation Site AQS #: 35-045-1005:

Substation O₃ Parameter 44201, Method 047, POC 1

The Bureau continues to operate the O₃ monitor at the Substation air monitoring site. There were no changes implemented in 2020.

Bloomfield Site AQS #:35-045-0009:

Bloomfield O₃ Parameter 44201, Method 047, POC 1

The Bureau continues to operate the O₃ monitor at the Bloomfield air monitoring site. There were no changes implemented in 2020.

Navajo Lake Site AQS# 35-045-0018:

Navajo Lake O₃ Parameter 44201, Method 047, POC 1

The Bureau continues to operate the O₃ monitor at the Navajo Lake air monitoring site. There were no changes implemented in 2020.

Ozone (O₃) Air Quality Control Region 2 (EPA Region 152)

The Bureau operates two ozone air monitoring sites in AQCR-2, one located in Sandoval County, and the second in Valencia County consisting of the Bernalillo and Los Lunas sites respectively. Figure 9 indicates the location of the Bernalillo and Los Lunas sites.

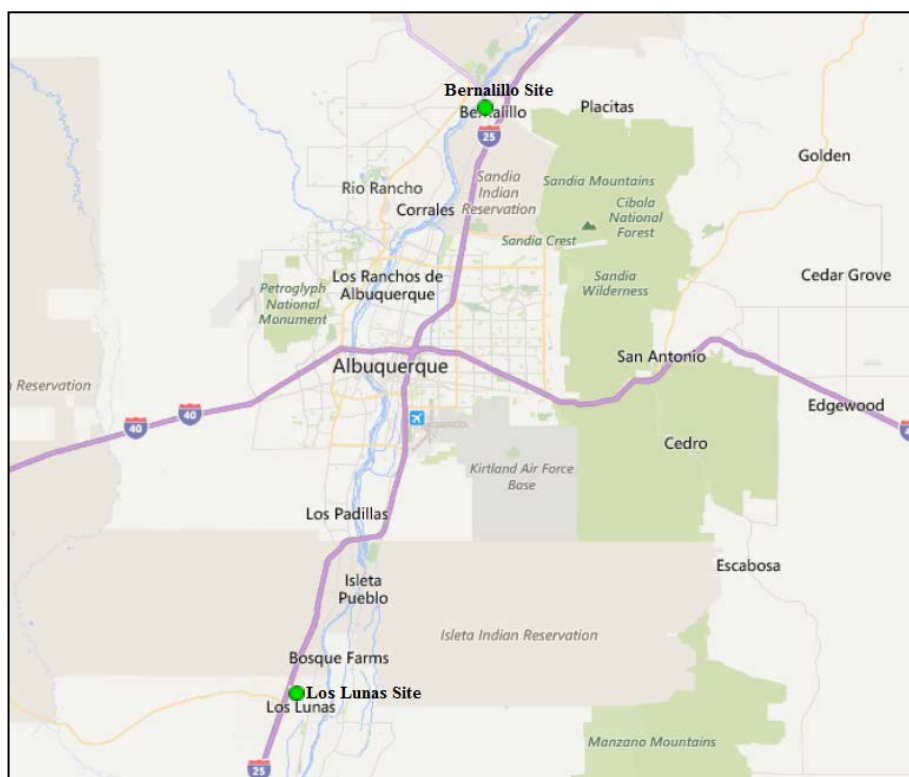


Figure 9

Bernalillo (DOT Yard) Site AQS#: 35-043-1001:

Bernalillo O₃ Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Bernalillo air monitoring site. EPA Region-VI has noted that this site is not required due to the City of Albuquerque (COA) currently operating more than the required Ozone sites for the Albuquerque MSA. However, NMED had requested to continue operating the O₃ monitor at Bernalillo and provided an explanation for continuing ozone monitoring in the Five-Year Network Assessment. NMED will continue collaborating with EPA Region-VI on appropriateness of continuing operating the Bernalillo site. No changes occurred in 2020.

Los Lunas AQS #: 35-061-0008:

Los Lunas O₃ Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Los Lunas air monitoring site. There were no changes implemented in 2020.

Ozone (O₃) Air Quality Control Region 3 (EPA Region 157)

The Bureau operates two ozone air monitoring sites in AQCR-3 located in Santa Fe County and Rio Arriba County consisting of the Santa Fe Airport and Coyote Ranger District sites. Figure 10 indicates the location of the two sites.



Figure 10

Santa Fe Airport AQS #: 35-049-0021:

Santa Fe Airport O₃ Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Santa Fe Airport air monitoring site. There were no changes implemented in 2020.

Coyote Ranger District AQS #: 35-039-0026:

Coyote Ranger District O₃ Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Coyote Ranger District air monitoring site. There were no changes implemented in 2020.

Ozone (O₃) Air Quality Control Region 5 (EPA Region 155)

The Bureau operates two ozone air monitoring sites in AQCR-5, located in Eddy County, and Lea County consisting of the Carlsbad and Hobbs sites. Figure 11 indicates the location of the two sites.

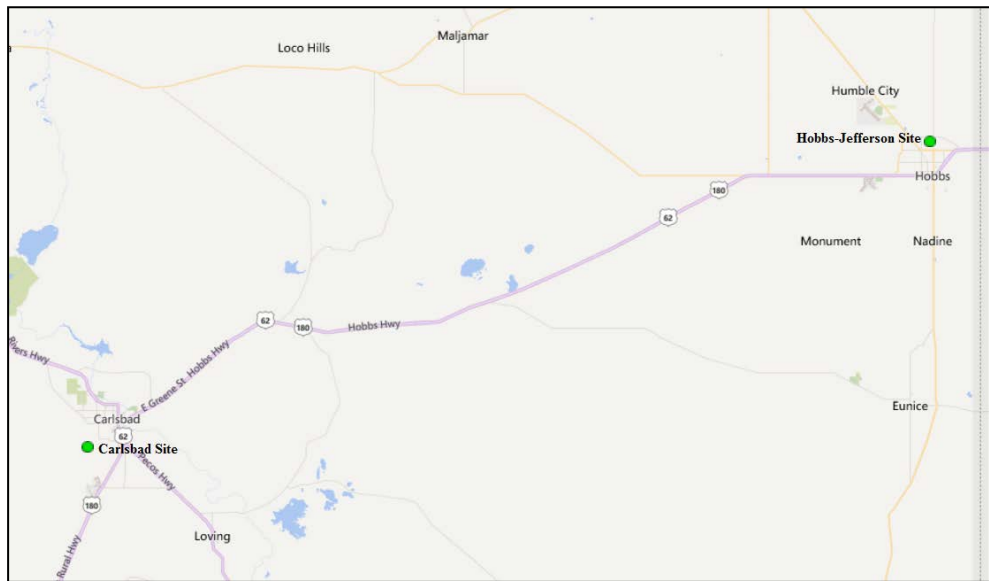


Figure 11

Carlsbad AQS #: 35-015-1005:

Carlsbad O₃ Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Carlsbad air monitoring site. There were no changes implemented in 2020.

Hobbs Jefferson AQS #: 35-025-0008:

Hobbs Jefferson O₃ Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Hobbs air monitoring site. There were no changes implemented in 2020.

Ozone (O₃) Air Quality Control Region 6 (EPA Region 153)

The Bureau operates a total of eight air monitoring sites in AQCR-6. Five of those sites monitor for ozone consisting of the Chaparral, Desert View, La Union, Santa Teresa, and Solano sites. Figure 12 indicates the location of the ozone monitoring sites.

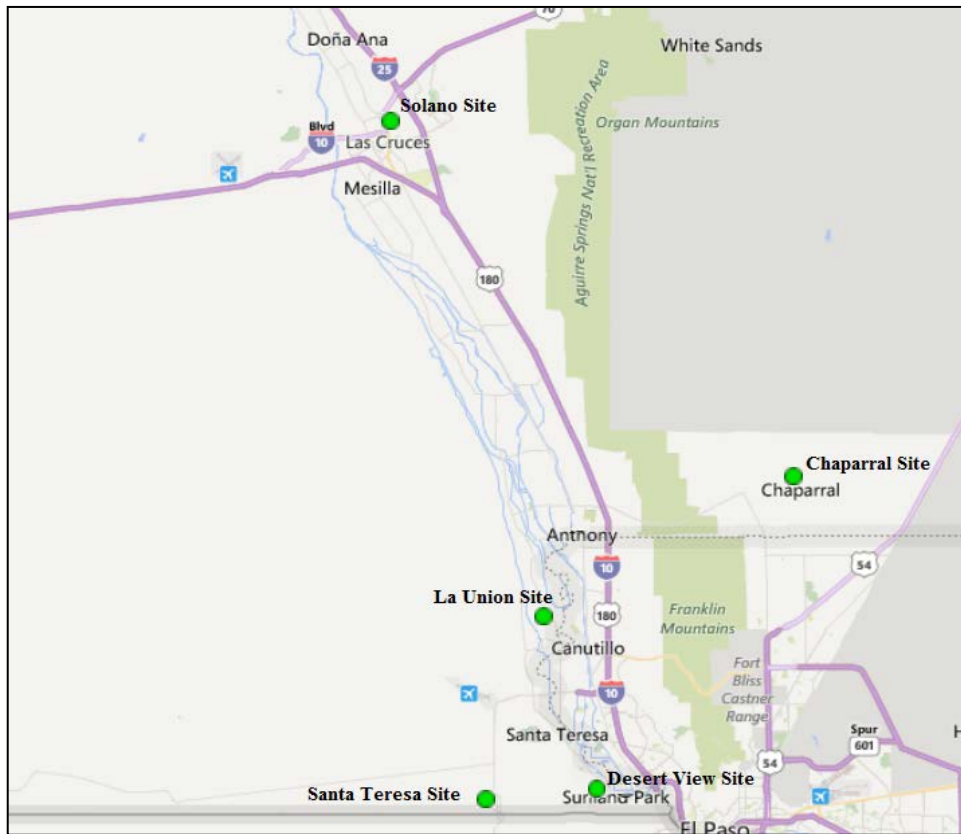


Figure 12

Chaparral AQS #: 35-013-0020:

Chaparral O₃ Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Chaparral air monitoring site. There were no changes implemented in 2020.

Desert View AQS #: 35-013-0021:

Desert View O₃ Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Desert View air monitoring site. There were no changes implemented in 2020.

La Union AQS #: 35-013-0008:

La Union O₃ Parameter 44201, Method 047, POC 2

The Bureau continues operating the Ozone monitor at La Union, there were no changes implemented in 2020.

Santa Teresa AQS #: 35-013-0022:

Santa Teresa O₃ Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at Santa Teresa, there were no changes implemented in 2020.

Solano Road **AQS #: 35-013-0023:**

Solano Road O₃ Parameter 44201, Method 047, POC 1

The Bureau continues operating the Ozone monitor at Solano Road, there were no changes implemented in 2020.

2.3 Sulfur Dioxide (SO₂)

The Bureau operates two air monitoring sites in the network for Sulfur Dioxide. Both sites are in the northern half of the state in AQCR-1 which is in San Juan County consisting of the Sub Station and Bloomfield air monitoring sites. Figure 13 below indicates the location of the SO₂ monitoring sites.

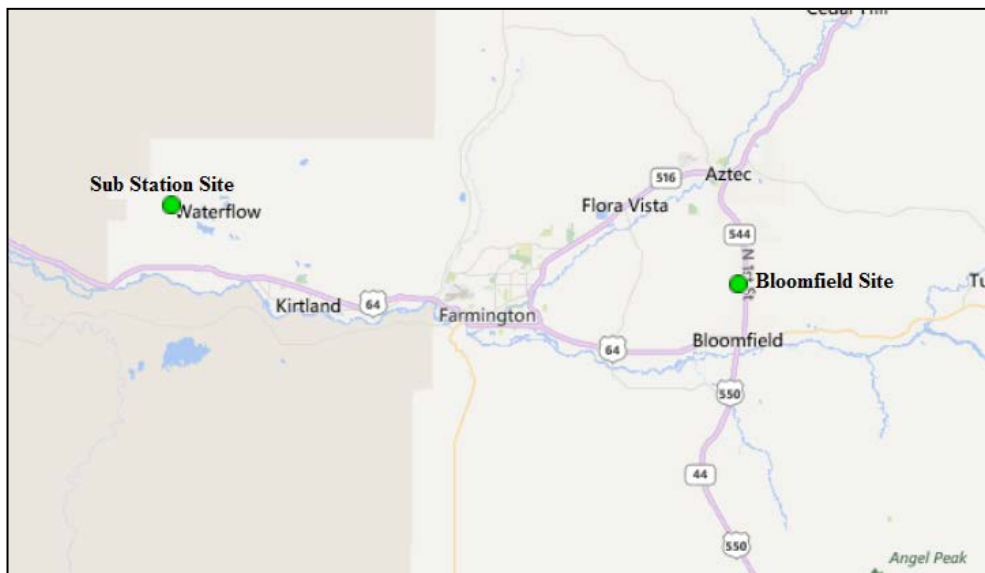


Figure 13

Sulfur Dioxide (SO₂) Air Quality Control Region 1 (EPA Region 014)

Substation SO₂ **AQS #:35-045-1005**

Substation SO₂ Parameter 42401, Method 060, POC 1 & Method 009, POC 3

The Bureau continues to operate the SO₂ monitor at the Substation air monitoring site, there were no changes implemented in 2020. No changes occurred in 2020.

Bloomfield SO₂ **AQS #:35-045-0009**

Bloomfield SO₂ Parameter 42401, Method 060, POC 1 & Method 009, POC 3

The Bureau continues to operate the SO₂ monitor at the Bloomfield air monitoring site, there were no changes implemented in 2020.

2.4 Particulate Matter PM_{2.5} Non-Continuous Federal Reference Method (FRM)

The Bureau currently operates three Method 145 PM_{2.5} FRM Partisol samplers within the air monitoring network, all three are in Doña Ana County which is AQCR-6. The Desert View monitoring site is the designated co-location site for the FRM 145 samplers operating in the network. All three samplers operate on a one in every three-day schedule. Though technically the co-located

Desert View site sampler operates on a one in every twelve-day schedule. AQB operates this sampler on a one in every three-day schedule due to power outages experienced in the past which caused the co-located sampler filters to be voided. Operating the co-located sampler on a one in every three-day schedule prevents sample loss. Figure 14 below indicates the location of the non-continuous FRM PM_{2.5} monitoring sites.



Figure 14

Particulate Matter PM_{2.5} (FRM) Air Quality Control Region 6 (EPA Region 153)

Desert View AQS #: 35-013-0021:

Desert View PM_{2.5} FRM (Primary) Parameter 88101, Method 145, POC 2

Desert View PM_{2.5} FRM (Co-Located) Parameter 88101, Method 145, POC 3

The Desert View site is designated as the bureau’s co-location site using the Thermo 2025i series Partisol PM_{2.5} samplers. In 2018, this site was chosen for co-location due to the area experiencing residential and commercial development nearby in Santa Teresa and on the Mexican side along the US/Mexican border which is just one mile south of the Desert View site. There were no changes implemented in 2020.

Anthony AQS#: 35-013-0016:

Anthony PM_{2.5} FRM Parameter 88101, Method 145, POC 2

The Bureau continues operating a co-located Partisol 2025i FRM PM_{2.5} sampler at the Anthony air monitoring site with the BAM-1020 FEM PM_{2.5} to meet requirements of 40 CFR Part 58 App. A.

2.5 Particulate Matter PM_{2.5} Continuous (BAM-1020 Sampler)

The Bureau currently operates six Method 170 BAM-1020 PM_{2.5} samplers within the air monitoring network designated as SLAMS. Three of the six samplers are in southern New Mexico’s Doña Ana County at the Anthony, Santa Teresa and Las Cruces Office sites. The fourth is in Lea County at the

Hobbs monitoring site. The remaining two samplers are in northern New Mexico with the fifth at the Santa Fe Airport monitoring site and the sixth at the Taos monitoring site. Figure 15 indicates the location of the Santa Fe Airport and Taos monitoring sites and Figure 16 indicates the Anthony, Las Cruces Office and Hobbs monitoring sites.



Figure 15



Figure 16

Air Quality Control Region 3 (EPA Region 157)

Santa Fe Airport AQS #: 35-049-0021:

Santa Fe Airport PM_{2.5} Continuous Parameter 88101, Method 170, POC 1

The Bureau continues to operate the Met-One BAM-1020 PM_{2.5} sampler, there were no changes implemented in 2020.

Taos AQS #: 35-055-0005:

Taos PM_{2.5} Continuous Parameter 88101, Method 170, POC 1

The Bureau continues to operate the Met-One BAM-1020 PM_{2.5} sampler. there were no changes implemented in 2020.

Air Quality Control Region 5 (EPA Region 155)

Hobbs Jefferson AQS#: 35-025-0008:

Hobbs Jefferson PM_{2.5} Continuous Parameter 88101, Method 170, POC 2

The Bureau continues to operate the Met-One BAM-1020 PM_{2.5} sampler. there were no changes implemented in 2020.

Air Quality Control Region 6 (EPA Region 153)

Anthony AQS #: 35-013-0016:

Anthony PM_{2.5} Continuous Parameter 88101, Method 170, POC 1

The Bureau continues to operate the Met-One BAM-1020 PM_{2.5} sampler. The Anthony site is the designated co-location site for the FEM Method 170 samplers operating in the network, there were no changes implemented in 2020.

Las Cruces Office AQS #: 35-013-0025:

Las Cruces PM_{2.5} Continuous Parameter 88101, Method 170, POC 2

The Bureau continues to operate the Met-One BAM-1020 PM_{2.5} sampler and is the Bureau's Regional Transport particulate site, there were no changes implemented in 2020.

Santa Teresa AQS #: 35-013-0022:

Santa Teresa PM_{2.5} Continuous Parameter 88101, Method 170, POC 1

The Bureau continues to operate the Met-One BAM-1020 PM_{2.5} sampler. there were no changes implemented in 2020.

2.6 Particulate Matter PM₁₀ Non-Continuous Federal Reference Method (FRM)

The Bureau operates one non-continuous Thermo Partisol 2025i FRM sampler in the monitoring network as the primary for PM₁₀ particulate matter. The sampler meets the EPA requirement set forth in 40CFR Part58 Appendix D based on population category and concentration of particulate matter 10 microns or less in aerodynamic diameter (PM₁₀). This sampler is currently located at the Anthony air monitoring site which also contains a Met-One BAM-1020 PM₁₀ continuous sampler as the assigned co-located sampler for the PM₁₀ FRM sampler per EPA requirements.

Air Quality Control Region 6 (EPA Region 153)

Anthony PM₁₀ FRM

Parameter 81102, Method 127, POC 1

The Bureau continues to operate the Partisol 2025i non-continuous sampler as the designated primary sampler for PM₁₀ particulate matter. Figure 17 indicates the location of the PM₁₀ monitoring site, there were no changes implemented in 2020.

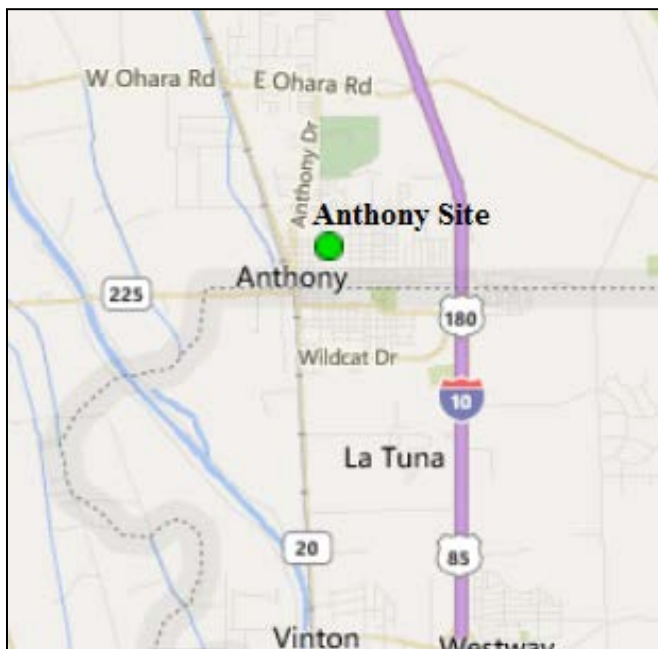


Figure 17

2.7 Particulate Matter PM₁₀ Continuous (BAM Sampler)

The Bureau operates seven Method 122 BAM-1020 PM₁₀ continuous samplers throughout the monitoring network. One of the seven BAM-1020 PM₁₀ samplers is operating as a Special Purpose Monitor (SPM) in the northern monitoring network located at the 1H Sub Station site. Figure 18 indicates the location of the northern New Mexico monitoring site. Six BAM-1020 PM₁₀ continuous samplers are located and operating in the Bureau's southern network as SLAMS monitors. Figure 19 indicates the locations of where the BAM-1020 PM₁₀ samplers in the southern network.

PM₁₀ Air Quality Control Region 1 (EPA Region 014)

Sub Station Site AQS #:35-045-1005:

Sub Station PM₁₀ Continuous

Parameter 81102, Method 122, POC 2

The Bureau continues to operate a Met-One BAM-1020 FEM PM₁₀ sampler as a Special Purpose Monitor (SPM) to obtain representative sampling of PM₁₀ for San Juan County, there were no changes implemented in 2020.

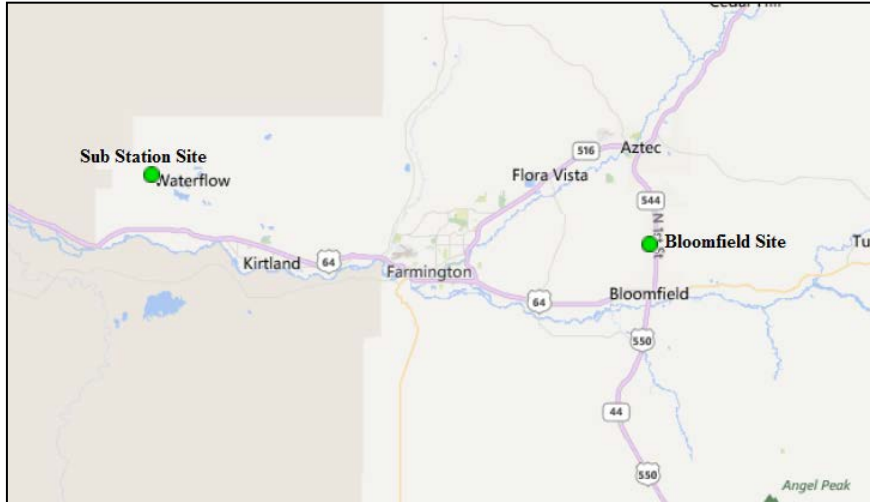


Figure18

PM₁₀ Air Quality Control Region 6 (EPA Region 153)

Anthony AQS #: 35-013-0016:

Anthony PM₁₀ Continuous Parameter 81102, Method 122, POC 2

The Bureau continues to operate the Met-One BAM-1020 FEM PM₁₀ continuous sampler, there were no changes implemented in 2020.

Chaparral AQS #: 35-013-0020:

Chaparral PM₁₀ Continuous Parameter 81102, Method 122, POC 2

The Bureau continues to operate the Met-One BAM-1020 FEM PM₁₀ continuous sampler, there were no changes implemented in 2020.

Desert View AQS #: 35-013-0021:

Desert View PM₁₀ Continuous Parameter 81102, Method 122, POC 2

The Bureau continues to operate the Met-One BAM-1020 FEM PM₁₀ continuous sampler, there were no changes implemented in 2020.

Holman Road AQS #: 35-013-0019:

Holman Road PM₁₀ Continuous Parameter 81102, Method 122, POC 2

The Bureau continues to operate the Met-One BAM-1020 FEM PM₁₀ continuous sampler, there were no changes implemented in 2020.

West Mesa AQS #: 35-013-0024:

West Mesa PM₁₀ Continuous

Parameter 81102, Method 122, POC 2

The Bureau continues to operate the Met-One BAM-1020 FEM PM₁₀ continuous sampler, there were no changes implemented in 2020. there were no changes implemented in 2020.

PM₁₀ Air Quality Control Region 7 (EPA Region 012)

Deming Airport AQS #: 35-029-0003:

Deming Airport PM₁₀ Continuous Parameter 81102, Method 122, POC 2

The Bureau continues to operate the Met-One BAM-1020 FEM PM₁₀ continuous sampler, there were no changes implemented in 2020.



Figure 19

3.0 Other Projects

There are two other projects continuing in New Mexico and are supported by NMED/AQB staff.

1. Northern air monitoring staff continue with the NADP-sponsored project to collect passive ammonia monitoring data in San Juan County, New Mexico. This project will continue if federal funds are available. Ammonia is a precursor of fine particulate matter which adversely affects public health and visibility. This continued study will augment the baseline data collected in 2007 to assess any significant changes in ambient ammonia levels.

2. NMED's northern air monitoring staff completed the Passive Mercury study as of July 2019. Sampling was conducted at NMED's monitoring sites in the four corners area consisting of the (1NL) Navajo Lake and (1H) Sub Station air monitoring sites. Initially there were a total of three sites with a third site at the Farmington Regional Airport, but due to budgetary constraints EPA discontinued sampling at that location. NMED is awaiting the final report and any comments/recommendations directed to NMED from EPA Region VI.
3. EPA Region-VI has requested NMED assistance on a collaborative two-year research study anticipated to take place over 2020-2021. The purpose of the study is to demonstrate the utility of several next-generation emissions measurement (NGEM) technologies near an oil and gas shale play in the Permian Basin in southeastern New Mexico. These NGEM tools will be evaluated according to their ability to improve detection of fugitive emissions of volatile organic compounds (VOCs) from unanticipated industrial processes that may be contributing to air quality in New Mexico's control region 5.

4.0 Summary

The intention of the Bureau is to continue to focus on pollutants of concern while also striving to continue to serve the public health needs and to satisfy the expectations of the New Mexico communities. The Bureau will inform EPA Region VI staff early in the process of any plans to make changes or modifications to the ambient air monitoring network, other than those described in this review, to ensure that state and federal priorities continue to be aligned.

4.1 Network Modifications During FY2020

During Fiscal Year 2020 which occurred from July 1, 2019 through June 30, 2020 the Bureau had not implemented any changes in the monitoring network. We anticipate replacing aging gaseous monitors within the network during fiscal years 2021 and 2022.

4.2 Pending System Modifications

AQCR-1

1H Sub Station PM₁₀ AQS#: 35-045-1005

NMED is requesting re-designation of the Sub Station BAM-1020 PM₁₀ SPM sampler to a State and Local Air Monitoring Station (SLAMS) sampler. This sampler was originally located at the Bloomfield air monitoring site and relocated to the Sub Station site due to EPA concerns of nearby sand piles. The sampler was installed on November 28, 2017 and operation started on December 1, 2017. Data collection started on December 4, 2017 after the manufacturers recommended warm-up period and 72-hour background test. Since the sampler did not start at the beginning of the quarter the data is incomplete. For the two-year period starting January 1, 2018 through December 31, 2019 the sampler operated with minimum interruption and data capture of at least 75% per quarter was obtained and verified.

5.0 Addressing New Monitoring Requirements in Monitoring Network

5.1 Lead (Pb)

Two federal criteria have been set up for Pb monitoring:

- Source-oriented – For sources over 0.5 Tons per year.
- “Non-source”-oriented in every urban area with NCore monitoring sites, that have a population of 500,000 or more.

As stated in previous annual network reviews, based on these criteria, no Pb monitors are required in regions under NMED/AQB jurisdiction.

5.2 Nitrogen Dioxide

Two federal criteria have been set up for NO₂ monitoring:

- Near-road NO₂ monitoring; 1 micro-scale site would be required in Core Based Statistical Areas (CBSA) \geq 1 million in population at a location of expected highest hourly NO₂ concentrations sited near a major road with high Annual Average Daily Traffic (AADT) counts.
- Community-wide; required in CBSAs \geq 1 million in population at a location of expected highest NO₂ concentrations representing neighborhood or larger (urban) spatial scale.

Based on these criteria, no new NO₂ monitors are required in the state’s air quality control regions under NMED/AQB jurisdiction.

5.3 Sulfur Dioxide

Two federal criteria have been set up for SO₂ monitoring:

- Based on population per CBSA and amount of SO₂ emissions within that CBSA, that is, the Population Weighed Emissions Index (PWEI) and
- Based on individual state contribution to national SO₂ inventory in the 2005 National Emissions Inventory (NEI).

Based on the PWEI criteria, NMED/AQB would not need to deploy any new monitors. Based on the 2005 NEI criteria, NMED/AQB would need one monitor. This requirement is already being complied with by virtue of the Substation site.

SO₂ Data Requirements Rule

Per EPA Requirement that by July 1, 2016, each air agency was required to identify, for each source area on the list, the approach it will use to characterize air quality to help characterize

sources listed as 2,000 tpy or larger, air agencies were to indicate by July 1, 2016 one of the three options to use which were:

- Option 1: Ambient air monitoring for a source
- Option 2: Air quality modeling for a source
- Option 3: Federally enforceable emissions limits applicable to sources less than 2,000 tpy

NMED chose the second option, but this requires operating both SO₂ monitors in the network (1H Sub Station site and the 1ZB Bloomfield site) in order to provide data for modeling. The most recent report shows that our only source of concern, the San Juan Generating Station, has reduced its SO₂ emissions since the December 2017 shut-down of the two boiler units. The modeling data also indicates that SO₂ emissions have reduced.

5.4 Ozone

During FY2020, several New Mexico ozone monitoring sites exceeded the 8-hour standard. This is mostly due to hot and dry conditions exhibited during the summer months, typically June through mid-September in which most exceedances occurred. However, the Carlsbad area high ozone concentrations can be attributed to increased Oil and Gas production which started at the end of 2016. As of late, ozone concentrations have been lower than last year for the same period of time beginning in March. It is presumed that this is related to cooler conditions this year than last year, rather than due to the COVID-19 pandemic and the stay-at-home mandates by the Governor of New Mexico.

The chart below is provided by EPA which tracks the number of ozone exceedances throughout the five Region-6 states. Typically, the October EPA chart is the end of the ozone season which indicates the total number of exceedances that occurred between April 1st through mid-October as well as the number of Air Quality Index Category Totals.

Region 6 8-hr Ozone Exceedance Day Update												
	preliminary data	(through October 17, 2019)										
		Applicable Standard = 70 ppb										
State/Cities	8-hour Ozone Year to Date Exceedance Days	Max. exceedance levels week of 10/11-10/17								Year to Date Air Quality Index Category Totals		
		F	S	S	M	T	W	R	# Unhealthy for Sensitive Groups	# Unhealthy	# Very Unhealthy	
New Mexico												
Albuquerque	4									4		
San Juan Co.												
Southern Dona Ana Co.	14									13	1	
Carlsbad	19									17	2	
Hobbs	3									3		

Notes: 71 - 85 ppb = Unhealthy for Sensitive Groups; 86 - 105 ppb = Unhealthy; >= 106 ppb = Very Unhealthy (based on applicable 70 ppb standard)

The chart below, also provided by EPA, provides the running 3-year Ozone Design Values for all NMED-AQB monitoring sites that measure ozone. This assists state environmental agencies in determining if the monitoring area is in attainment or non-attainment of the ozone standard and necessary courses of action that need to be implemented to achieve attainment.

Current EPA 3-Year Ozone Design Values 2016 through 2018

State Name	County Name	State FIPS	County FIPS	EPA Region	AQS Site ID	2016-2018 Design Value (ppm) ^{1,2}	Meets NAAQS?	CBSA Name
New Mexico	Bernalillo	35	001	6	350010023	0.070	Yes	Albuquerque, NM
New Mexico	Dona Ana	35	013	6	350130021	0.074	No	Las Cruces, NM
New Mexico	Eddy	35	015	6	350151005	0.074	No	Carlsbad-Artesia, NM
New Mexico	Lea	35	025	6	350250008	0.070	Yes	Hobbs, NM
New Mexico	Rio Arriba	35	039	6	350390026	0.067	Yes	Espanola, NM
New Mexico	Sandoval	35	043	6	350431001	0.068	Yes	Albuquerque, NM
New Mexico	San Juan	35	045	6	350450018	0.070	Yes	Farmington, NM
New Mexico	Santa Fe	35	049	6	350490021	0.066	Yes	Santa Fe, NM
New Mexico	Valencia	35	061	6	350610008	0.067	Yes	Albuquerque, NM

The 2008 O₃ NAAQS Good Neighbor SIP and 2015 O₃ NAAQS infrastructure SIP were both due to EPA by October 1, 2018. NMED is not proposing to adopt any additional control measures, we will provide certifications that our current SIP is sufficient to implement and enforce the NAAQS. NMED's Planning section has begun to develop control measures for areas that are within 95% of the NAAQS.

6.0 Other Issues

Position Vacancies:

At present the NMED-AQB Monitoring Section has all seven positions filled. The Bureau filled one vacant (ESS-O) operational position October 21, 2019, in the Farmington field office.

A draft of this document was made available to the public June 1 through June 30, 2020 which was posted on our web page at <http://www.env.nm.gov/air-quality/>. NMED-AQB received a comment from the New Mexico Oil and Gas Association (NMOGA). NMOGA provided two recommendations:

1. Add a Photochemical Assessment Monitoring Station (PAMS) monitor for Volatile Organic Compounds (VOC) monitoring in Eddy County.
2. Add a continuous PM_{2.5} Monitor in San Juan County.

New Mexico Environment Department – Air Quality Bureau plans to review and assess these comments with Department senior management and representatives of EPA Region-6.

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TABLE 1
New Mexico Monitoring Network in 2020

Site ACS #	Site Name	Station Type	Site Address	Latitude	Longitude	Relative Location	Analysis Method	Operating Schedule	Is site proposed to be removed/inverted within next 18 months?	Monitoring Objective	NAAQS Compliance *	monitor(s) represented	Special State
35-005-1005	HE Substation	SLA/S	Shiproot Electrical Separation, Wrenham, NM 87421	34.7976	-106.4901	Ozone	UV Photometric	Continuous	No	Monitoring: Ozone	Yes	Farmington MSA	Regional
		SLA/S				Nitrogen Dioxide	Chemluminescence	Continuous		General Background	Yes	Farmington MSA	Regional
		SLA/S				Sulfur Dioxide	Passel Fluorescence	Continuous		Source Oriented	Yes	Farmington MSA	Regional
		PM				PM ₁₀	Continuous: BAM-100	Continuous		General Background	Yes	Farmington MSA	Regional
35-005-0009	12B Broomfield	SLA/S	2200 N 1st Street, Broomfield, NM 87413	34.7421	-107.9774	Ozone	UV Photometric	Continuous	No	Monitoring: Ozone	Yes	Farmington MSA	Neighborhood
		SLA/S				Nitrogen Dioxide	Chemluminescence	Continuous		General Background	Yes	Farmington MSA	Neighborhood
		SLA/S				Sulfur Dioxide	Passel Fluorescence	Continuous		Source Oriented	Yes	Farmington MSA	Neighborhood
35-005-0018	INT. Naranja Lake	SLA/S	4134 Highway 639, Naranja Dam, NM 87419	34.8097	-107.6514	Ozone	UV Photometric	Continuous	No	Regional Transport	Yes	Farmington MSA	Metropolitan
		SLA/S				Nitrogen Dioxide	Chemluminescence	Continuous		Regional Transport	Yes	Farmington MSA	Metropolitan
35-005-0008	JLL Las Lunas	SLA/S	1000 W. Main St. Las Lunas, NM 87031	34.8147	-106.7410	Ozone	UV Photometric	Continuous	No	Monitoring: Ozone	Yes	Abiquayue MSA	Neighborhood
		SLA/S				Nitrogen Dioxide	Chemluminescence	Continuous		Population Exposure	Yes	Abiquayue MSA	Neighborhood
35-005-1001	ZZZ Bernabito	SLA/S	600 Oak Street, Bernabito, NM 87044	33.2988	-106.5470	Ozone	UV Photometric	Continuous	No	Monitoring: Ozone	Yes	Albuquerque MSA	Neighborhood
35-005-0016	KCBO Coyote Range District	SLA/S	21 New Mexico 96, Coyote, NM 87012	34.1877	-106.8894	Ozone	UV Photometric	Continuous	No	Regional Transport	Yes	Albuquerque-Santa Fe/Valle Grande MSA	Regional
35-005-0011	SSA Santa Fe Airport	SLA/S	2001 Avenida Dr. Santa Fe, NM 87507	35.6198	-106.0797	Ozone	UV Photometric	Continuous	No	Population Exposure	Yes	Santa Fe MSA	Neighborhood
		SLA/S				PM ₁₀	Continuous: BAM-100	Continuous		Population Exposure	Yes	Santa Fe MSA	Neighborhood
35-005-0005	ZZD Tase	SLA/S	123 Camino de Santiago Fire Station, Tase, NM 87571	34.3833	-105.5849	PM ₁₀	Continuous: BAM-100	Continuous	No	Monitoring: Ozone	Yes	Tosco MSA	Neighborhood
35-005-1005	52R Cariboh	SLA/S	2811 Highland Ln., Cariboh, NM 80720	31.3940	-104.2940	Ozone	UV Photometric	Continuous	No	General Background	Yes	Cariboh-Artesia, CERRA/USA	Urban
		SLA/S				Nitrogen Dioxide	Chemluminescence	Continuous		General Background	Yes	Cariboh-Artesia, CERRA/USA	Urban
35-005-0008	52S Hobbs-Jefferson	SLA/S	2230 N. Jefferson St., Hobbs, NM 88340	31.7268	-103.1230	Ozone	UV Photometric	Continuous	No	Monitoring: Ozone	Yes	Hobbs CERRA/USA	Neighborhood
		SLA/S				Nitrogen Dioxide	Chemluminescence	Continuous		Population Exposure	Yes	Hobbs CERRA/USA	Neighborhood
		SLA/S				PM ₁₀	Continuous: BAM-100	Continuous		General Background	Yes	Hobbs CERRA/USA	Neighborhood
35-005-0016	60M Anthony	SLA/S	706 Church St., Anthony, NM 88021	31.0033	-106.5902	PM ₁₀	Sequential PM ₁₀	Every 6th Day	No	Population Exposure	Yes	El Paso-Las Cruces CSA	Neighborhood
		SLA/S				PM _{2.5}	Continuous: BAM-100	Continuous		Population Exposure	Yes	El Paso-Las Cruces CSA	Neighborhood
		SLA/S				PM ₁₀	Co-located Sequential PM ₁₀	Every 3rd Day		Population Exposure	Yes	El Paso-Las Cruces CSA	Neighborhood
35-005-0008	60 L. Tatum	SLA/S	7046 McNeil L. Tatum, NM 88021	31.9127	-106.6320	Ozone	UV Photometric	Continuous	No	Monitoring: Ozone	Yes	El Paso-Las Cruces CSA	Urban
		SLA/S				PM ₁₀	Continuous: BAM-100	Continuous		General Background	Yes	El Paso-Las Cruces CSA	Urban
35-005-0014	60M West Mesa	SLA/S	West Mesa West 446, Las Cruces, NM 88065	31.2781	-106.8849	PM ₁₀	Continuous: BAM-100	Continuous	No	Up Wind Background	Yes	El Paso-Las Cruces CSA	Urban
35-005-0019	62Z Hobson Road	SLA/S	Las Cruces West 441, Las Cruces, NM 88012	31.4246	-106.6729	PM ₁₀	Continuous: BAM-100	Continuous	No	Population Exposure	Yes	El Paso-Las Cruces CSA	Urban
35-005-0010	62X Chaparral	SLA/S	680 McComb, Chaparral, NM 88001	31.0499	-106.4955	Ozone	UV Photometric	Continuous	No	Monitoring: Ozone	Yes	Not in an MSA	Urban
		SLA/S				PM ₁₀	Continuous: BAM-100	Continuous		Population Exposure	Yes	Not in an MSA	Urban
35-005-0011	62M Desert View	SLA/S	5935A Villa Vista, Salsburg Park, NM 88063	31.7961	-106.5839	Ozone	UV Photometric	Continuous	No	Monitoring: Ozone	Yes	El Paso-Las Cruces CSA	Neighborhood
		SLA/S				Nitrogen Dioxide	Chemluminescence	Continuous		Population Exposure	Yes	El Paso-Las Cruces CSA	Neighborhood
		SLA/S				PM ₁₀	Continuous: BAM-100	Continuous		Population Exposure	Yes	El Paso-Las Cruces CSA	Neighborhood
		SLA/S				PM _{2.5}	Sequential PM ₁₀	Every 3rd Day		Population Exposure	Yes	El Paso-Las Cruces CSA	Neighborhood
		SLA/S				PM ₁₀	Co-located Sequential PM ₁₀	Every 3rd Day		Population Exposure	Yes	El Paso-Las Cruces CSA	Neighborhood
35-005-0012	62N Santa Teresa	SLA/S	1044 Santa Teresa Interl Blvd., Santa Teresa, NM 88069	31.7081	-106.8036	Ozone	UV Photometric	Continuous	No	Monitoring: Ozone	Yes	El Paso-Las Cruces CSA	Urban
		SLA/S				Nitrogen Dioxide	Chemluminescence	Continuous		General Background	Yes	El Paso-Las Cruces CSA	Urban
		SLA/S				PM ₁₀	Continuous: BAM-100	Continuous		General Background	Yes	El Paso-Las Cruces CSA	Urban
35-005-0012	62Q Salinas	SLA/S	793 N. Salinas Drive, Las Cruces, NM 88001	31.3187	-106.7675	Ozone	UV Photometric	Continuous	No	Monitoring: Ozone	Yes	El Paso-Las Cruces CSA	Urban
35-005-0015	62J Las Cruces	SLA/S	2201 Bernardo Rd SW, Las Cruces, NM 88001	31.3103	-106.7512	PM ₁₀	Continuous: BAM-100	Continuous	No	Regional Transport	Yes	El Paso-Las Cruces CSA	Neighborhood
35-005-0003	7E Domingue Airport	SLA/S	3412 Bernardo Road, Domingue, NM 88040	31.2538	-107.7227	PM ₁₀	Continuous: BAM-100	Continuous	No	Population Exposure	Yes	Domingue CERRA/USA	Neighborhood

*All NMED AQIS sites and numbers conform to 49 CFR, Subchapter C, Part 59, Appendix A

Is site proposed to be removed/inverted within next 18 months?