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July 1, 2016

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Dallas, Texas 75202

RECEIVED  
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AIR PERMITS SECTION  
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Re: 2016 Annual Network Review

Dear Mr. Hansen:

The purpose of the attached 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 2015/16.

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. This network plan is required to provide the framework for the establishment and maintenance of an air quality surveillance system. The annual monitoring network plan must be made available for public inspection for at least 30 days prior to submission to EPA. The plan was posted June 1, 2016 through June 30, 2016. No comments were received.

Regards,

Richard L. Goodyear, PE  
Bureau Chief  
Air Quality Bureau

# NMED

New  
Mexico  
Environment  
Department



Air Quality Bureau

2016 Annual Network

Review

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**2016 Network Review  
Air Quality Bureau  
New Mexico Environment Department  
July 1, 2016**

**Prepared by  
Roman Szkoda, Ambient Air Monitoring Program Manager**

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 2016.

## **Introduction**

In October 2006, US EPA issued final regulations concerning state and local agency ambient air monitoring networks. 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 2016 season.

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. This network review is required to provide the framework for establishment and maintenance of an air quality surveillance system. 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 2016, the Bureau operated 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: NO<sub>2</sub>, O<sub>3</sub>, CO, Lead, particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), and SO<sub>2</sub> for ambient air monitoring networks.

In 2016 the Ambient Air Monitoring Section worked with a full-time staff of seven, with no vacancies.

Table 1 (Network Element Worksheet) contains a listing of all New Mexico Environment Department, Air Quality Bureau ambient air monitoring sites operating at the end of the state fiscal year 2016.

### **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 a localized health concern, and tracking long-term trends in air quality. New Mexico monitors four of the six NAAQS criteria pollutants: NO<sub>2</sub>, O<sub>3</sub>, particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), and SO<sub>2</sub>. 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 (NO<sub>2</sub>)**

NO<sub>2</sub> 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 (O<sub>3</sub>)**

Ground-level O<sub>3</sub>, 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 into this reaction, VOCs and oxides of nitrogen, create ozone in the presence of sunlight. Ozone is a strong irritant of the upper respiratory system and also causes damage to crops.

#### **Sulfur Dioxide (SO<sub>2</sub>)**

SO<sub>2</sub> 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<sub>2.5</sub>)**

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 (PM<sub>10</sub>)**

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<sub>x</sub>/NO<sub>2</sub> data, the Model 43i Pulsed Fluorescence monitor collects SO<sub>2</sub> data and the Model 49i UV Photometric monitor collects Ozone data. For particulate matter NMED-AQB uses the Rupprecht and Patashnick models 1400a and 1400ab continuous samplers collect either for PM<sub>10</sub> or PM<sub>2.5</sub> sized particulate matter. The Rupprecht and Patashnick model 2025A Partisol sampler is used as our manual FRM sampling for PM<sub>2.5</sub>. NMED-AQB is currently phasing out the R&P 2025A Partisol samplers with Thermo Environmental Instruments 2025i series Partisol samplers for the reason that the 2025A samplers are seventeen years old. The Bureau still uses one Wedding PM<sub>10</sub> sampler for manual sampling for PM<sub>10</sub>. The Bureau has requested in the 5-Year Network Assessment to phase out the Wedding PM<sub>10</sub> sampler with a 2025 Partisol sampler and is currently waiting for concurrence and approval from EPA. NMED-AQB will replace the aging TEOM PM<sub>10</sub> continuous samplers with Met-One Instrument's BAM-1020 PM<sub>10</sub> continuous samplers, upon approval by EPA Region VI of NMED's – AQB 5-Year Network Assessment.

## 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 to be implemented during 2016. Current NAAQS, data trends, siting concerns, site access concerns, and other monitoring issues all contribute to any proposed network revisions.

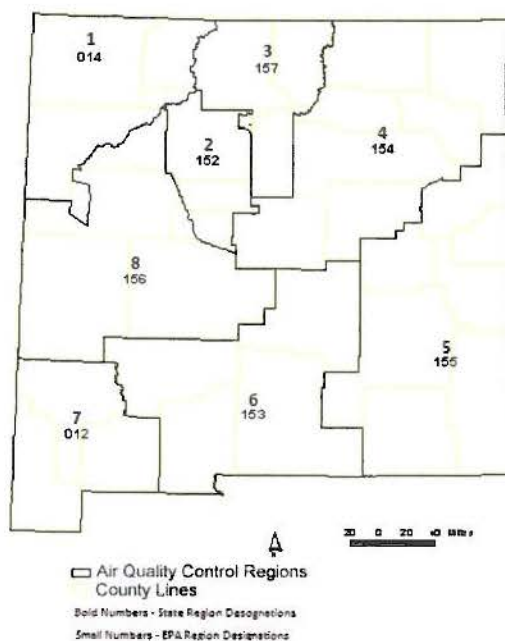


Figure 1



The Bureau's air monitoring network for 2016 consists of the sites and monitors listed in Table 1. All site changes which have occurred or plan to take place in 2016 are included along with any network modifications for 2016. Figure-1 is an overview of the state's and EPA's designation of Air Quality Control Regions (AQCR's). Figure-2 depicts AQB's current monitoring network and shows the locations where monitoring takes place in 2016. The number of monitoring locations operated by the State changed from 21 to 20 sites.

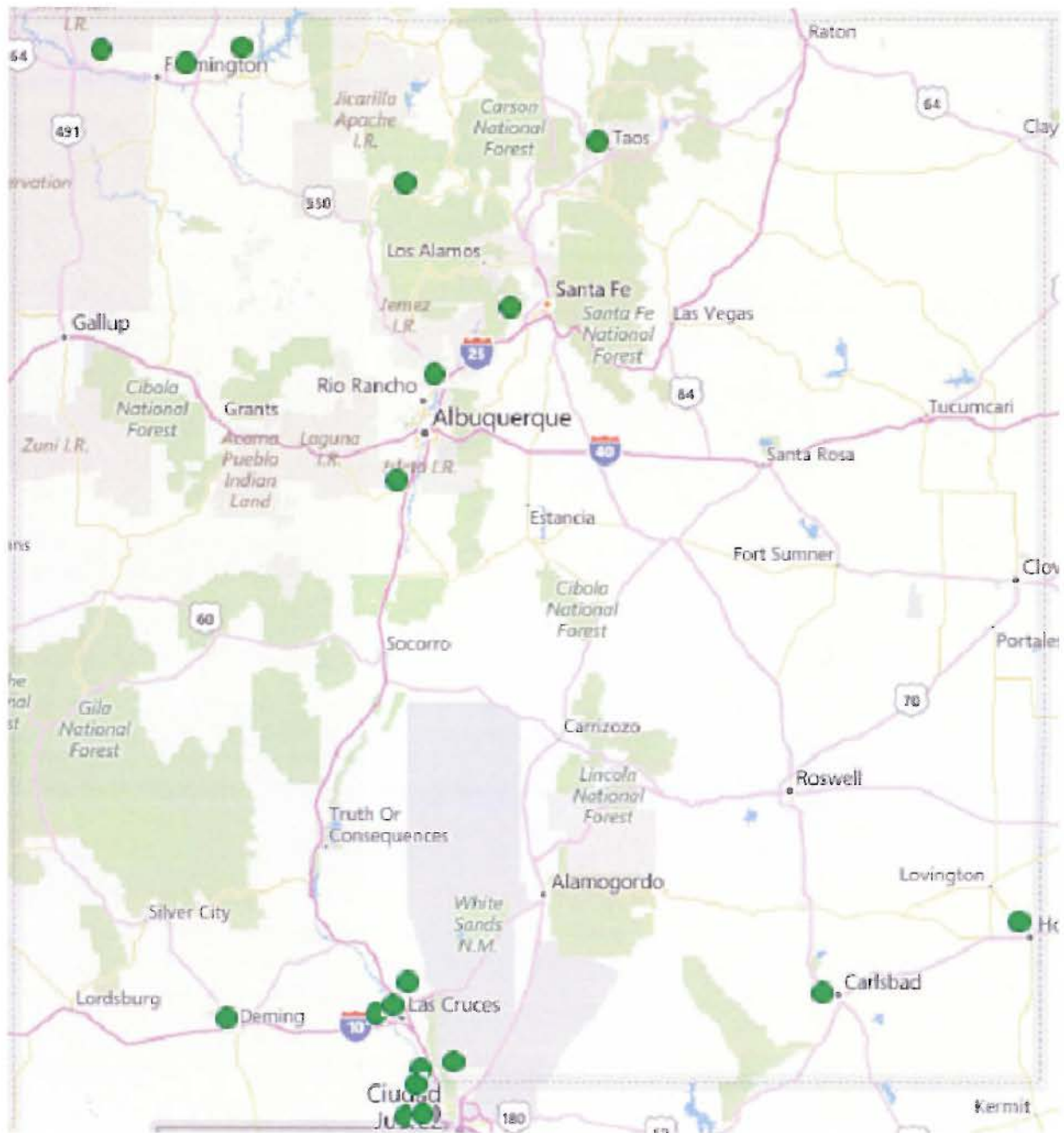


Figure 2



## **2.1 Nitrogen Dioxide (NO<sub>2</sub>)**

The Bureau operates seven air monitoring sites in the network for Nitrogen Dioxide. Three in AQCR-1 which are located 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 (NO<sub>2</sub>) Air Quality Control Region 1 (EPA Region 014)**

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

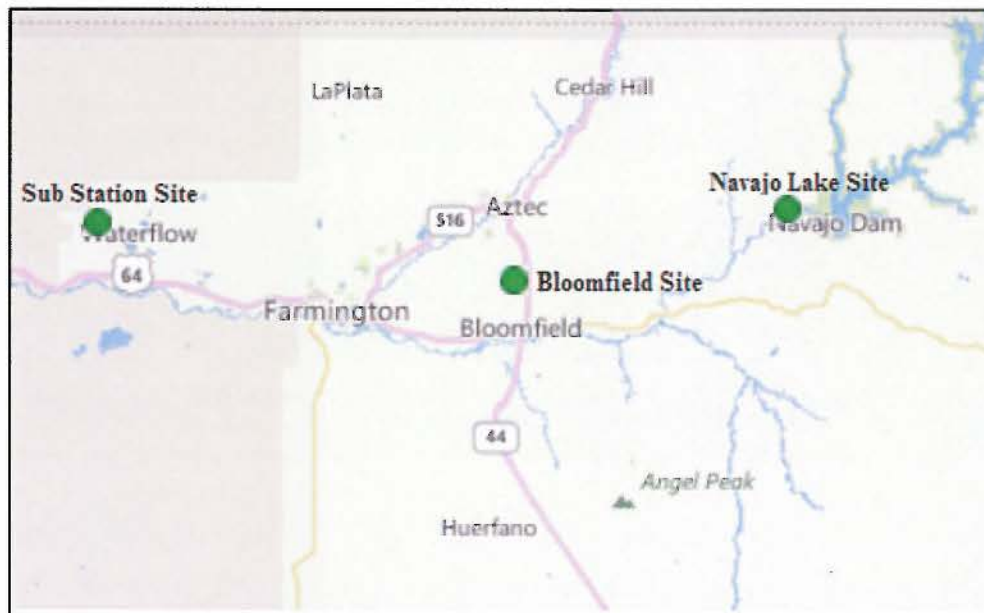


Figure 3

#### **Substation Site      AQS #: 35-045-1005:**

**Substation NO<sub>2</sub>**      Parameter 42602, Method 074, POC 2

The Bureau continues to operate the NO<sub>2</sub> monitor at the Substation air monitoring site. No changes are anticipated for 2016.

#### **Bloomfield Site      AQS #:35-045-0009:**

**Bloomfield NO<sub>2</sub>**      Parameter 42602, Method 074, POC 1

The Bureau continues to operate the NO<sub>2</sub> monitor at the Bloomfield air monitoring site. No changes are anticipated for 2016.

#### **Navajo Lake Site      AQS# 35-045-0018:**

**Navajo Lake NO<sub>2</sub>**      Parameter 42602, Method 074, POC 2

The Bureau continues to operate the NO<sub>2</sub> monitor at the Navajo Lake air monitoring site. No changes are anticipated for 2016.

**Nitrogen Dioxide (NO<sub>2</sub>) 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 below indicates the location of the monitoring sites.

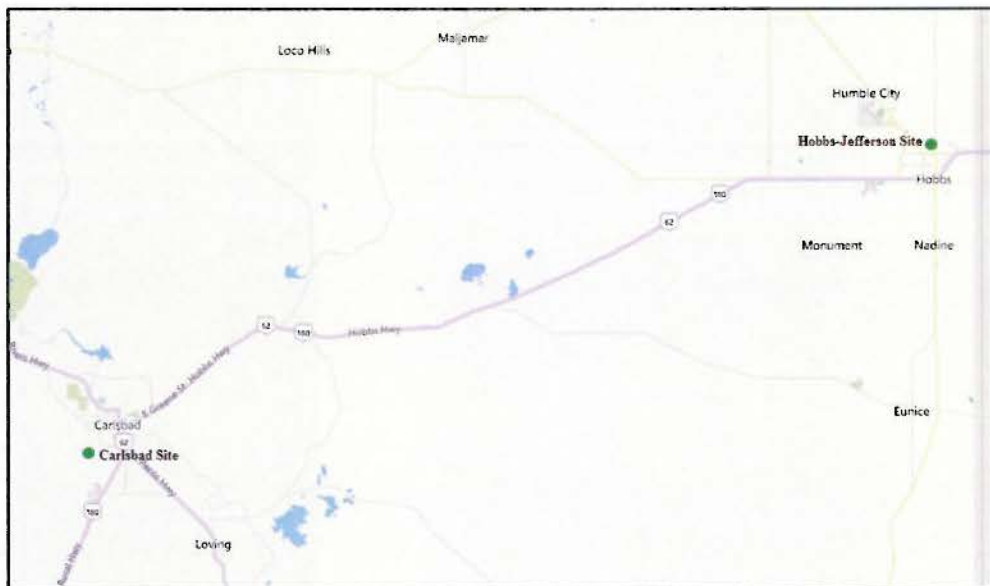


Figure 4

**Carlsbad AQS #: 35-015-1005:**

**Carlsbad NO<sub>2</sub>**

Parameter 42602, Method 074, POC 1

The Bureau continues to operate the NO<sub>2</sub> monitor at the Carlsbad air monitoring site. No changes are anticipated for 2015.

**Hobbs AQS #: 35-025-0008:**

**Hobbs NO<sub>2</sub>**

Parameter 42602, Method 074, POC 2

The Bureau continues to operate the NO<sub>2</sub> monitor at the Hobbs air monitoring site. No changes are anticipated for 2015.

**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 NO<sub>2</sub>. Figure 5 below indicates the location of the monitoring sites.





Figure 5

**Desert View AQS #: 35-013-0021:**

**Desert View NO<sub>2</sub>** Parameter 42602, Method 074, POC 2

The Bureau continues to operate the NO<sub>2</sub> monitor at the Desert View air monitoring site. No changes are anticipated for 2016.

**Santa Teresa AQS #: 35-013-0022:**

**Santa Teresa NO<sub>2</sub>** Parameter 42602, Method 074, POC 2

The Bureau continues to operate the NO<sub>2</sub> monitor at the Santa Teresa air monitoring site. No changes are anticipated for 2016.

**2.2 Ozone (O<sub>3</sub>)**

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



Figure 6



Figure 7

**Ozone (O<sub>3</sub>) Air Quality Control Region 1 (EPA Region 014)**

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



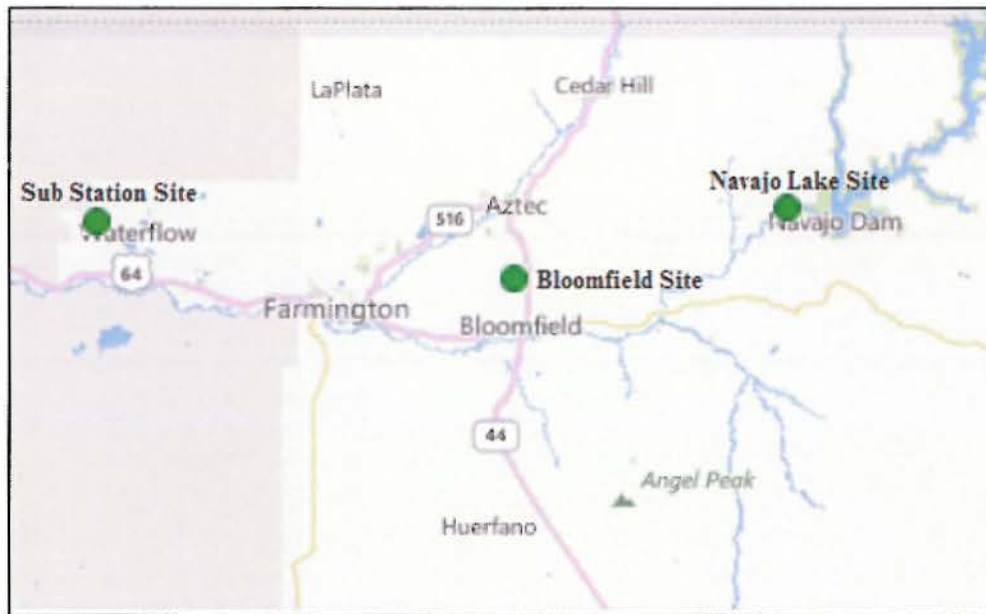


Figure 8

**Substation Site      AQS #: 35-045-1005:**

**Substation O<sub>3</sub>**      Parameter 44201, Method 047, POC 1

The Bureau continues to operate the O<sub>3</sub> monitor at the Substation air monitoring site. No changes are anticipated for 2016.

**Bloomfield Site      AQS #:35-045-0009:**

**Bloomfield O<sub>3</sub>**      Parameter 44201, Method 047, POC 1

The Bureau continues to operate the O<sub>3</sub> monitor at the Bloomfield air monitoring site. No changes are anticipated for 2016.

**Navajo Lake Site      AQS# 35-045-0018:**

**Navajo Lake O<sub>3</sub>**      Parameter 44201, Method 047, POC 1

The Bureau continues to operate the O<sub>3</sub> monitor at the Navajo Lake air monitoring site. No changes are anticipated for 2016.

**Ozone (O<sub>3</sub>) 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 O<sub>3</sub>** Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Bernalillo air monitoring site. EPA has noted that this site is not required due to the City of Albuquerque (COA) currently operating more than the required Ozone sites. However, NMED requests to continue operating the O<sub>3</sub> monitor at Bernalillo and has provide an explanation for continuing ozone monitoring in the 5-Year Network Assessment. EPA approval of NMED's 5-Year Network Assessment is currently pending.

**Los Lunas AQS #: 35-061-0008:**

**Los Lunas O<sub>3</sub>** Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Los Lunas air monitoring site. No changes are anticipated for 2016.

**Ozone (O<sub>3</sub>) 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 O<sub>3</sub>**

Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Santa Fe Airport air monitoring site. No changes are anticipated for 2016.

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

**Coyote Ranger District O<sub>3</sub>**

Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Coyote Ranger District air monitoring site. No changes are anticipated for 2016.

**Ozone (O<sub>3</sub>) 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.

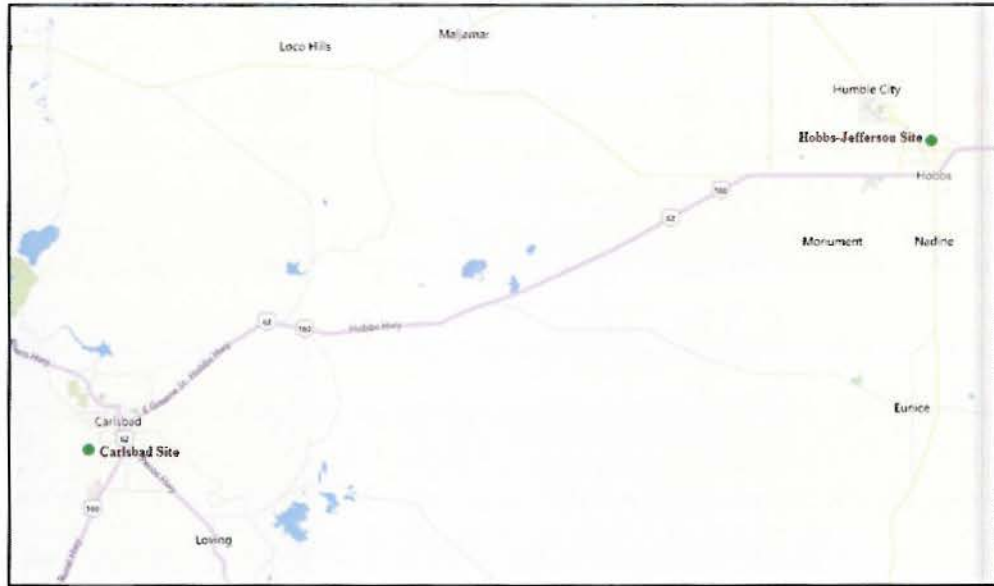


Figure 11

**Carlsbad AQS #: 35-015-1005:**

**Carlsbad O<sub>3</sub>** Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Carlsbad air monitoring site. No changes are anticipated for 2016.

**Hobbs AQS #: 35-025-0008:**

NMED-AQB had concerns with the car port installed adjacent to the monitoring site. However, a recent EPA Technical Systems Audit was conducted and EPA commented that the site appeared to be meeting siting criteria per requirement of the 40 CFR Part 58 App. E. and that NMED-AQB submit a separate document indicating all distances and heights of any and all obstructions to show compliance.

**Hobbs O<sub>3</sub>** Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Hobbs air monitoring site. No changes are anticipated for 2016 other than stated above.

**Ozone (O<sub>3</sub>) 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 O<sub>3</sub>**

Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Chaparral air monitoring site. No changes are anticipated for 2016.

**Desert View AQS #: 35-013-0021:**

**Desert View O<sub>3</sub>**

Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Desert View air monitoring site. No changes are anticipated for 2016.

**La Union AQS #: 35-013-0008:**

**La Union O<sub>3</sub>**

Parameter 44201, Method 047, POC 2

The Bureau continues operating the Ozone monitor at La Union, no changes are anticipated for 2016.

**Santa Teresa AQS #: 35-013-0022:**

The Santa Teresa site and surrounding area is currently undergoing major commercial growth due to the New Mexico Governor's economic development initiative for Santa Teresa as a commercial zone between Mexico and the US. The surrounding area has become more industrial due to the Union Pacific Railroad's Intermodal Trans-shipment Terminal, as well as Twin Cities Services which operates freight storage and transport facilities. Twin Cities Services started operating last year, along with a host of other commercial entities.

NMED-AQB had requested to relocate the Santa Teresa site approximately a half mile east of its present location due to increased traffic to and from Mexico occurring at the Santa Teresa Border crossing. The relocation request is under bureau revision to include EPA's requested inclusions. It will be sent to EPA for a second review.

**Santa Teresa O<sub>3</sub>** Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at Santa Teresa; no monitoring equipment changes are anticipated for 2016.

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

**Solano Road O<sub>3</sub>** Parameter 44201, Method 047, POC 1

The Bureau continues operating the Ozone monitor at Solano road; no changes are anticipated for 2016.

### **2.3 Sulfur Dioxide (SO<sub>2</sub>)**

The Bureau operates two air monitoring sites in the network for Sulfur Dioxide. Both sites are located 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 SO<sub>2</sub> monitoring sites.

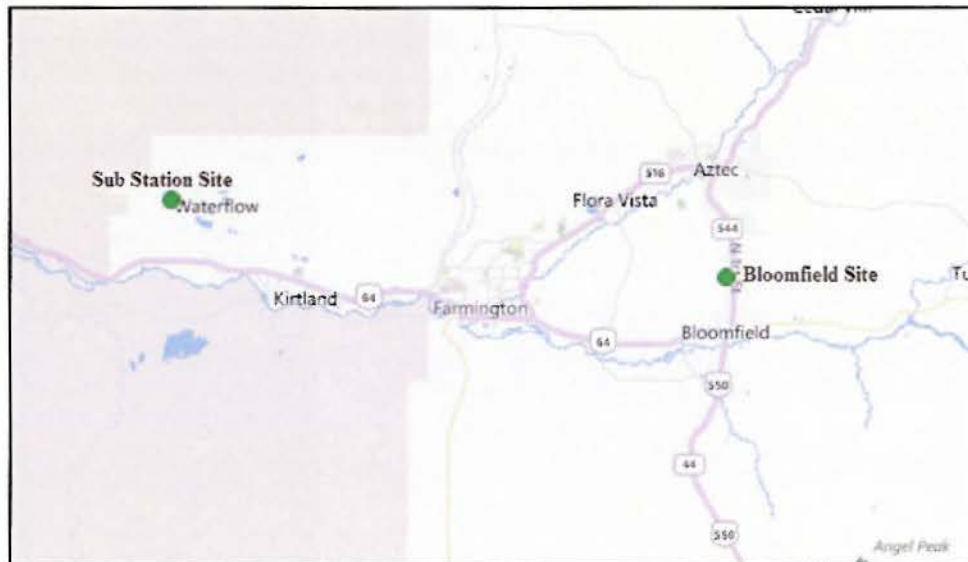


Figure 13

### **Sulfur Dioxide (SO<sub>2</sub>) Air Quality Control Region 1 (EPA Region 014)**

**Substation SO<sub>2</sub> AQS #:35-045-1005**

**Substation SO<sub>2</sub>** Parameter 42401, Method 060, POC 3

The Bureau continues to operate the SO<sub>2</sub> monitor at the Substation air monitoring site. No changes are anticipated for 2016.



**Bloomfield SO<sub>2</sub> AQS #:35-045-0009**

**Bloomfield SO<sub>2</sub>** Parameter 42401, Method 060, POC 3

The Bureau continues to operate the SO<sub>2</sub> monitor at the Bloomfield air monitoring site. No changes are anticipated for 2016.

**2.4 Particulate Matter PM<sub>2.5</sub> Non Continuous Federal Reference Method (FRM)**

The Bureau currently operates four PM<sub>2.5</sub> FRM samplers within the air monitoring network. Three of the samplers are in Doña Ana County and one is located in Lea County. Of the three samplers in Doña Ana County the Desert View monitoring site is the designated co-location site and the Las Cruces Office site is the Transport site. The Hobbs-Jefferson site in Lea County is the Background site. NMED-AQB will be replacing the aging 2025A Partisol PM<sub>2.5</sub> FRM samplers located at the Las Cruces Office site and Hobbs-Jefferson site with the 2025i series sampler. Figure 14 indicates the location of the PM<sub>2.5</sub> FRM sites.



Figure 14

**Particulate Matter PM<sub>2.5</sub> (FRM) Air Quality Control Region 5 (EPA Region 155)**

**Hobbs AQS #: 35-025-0008:**

**Hobbs PM<sub>2.5</sub> FRM** Parameter 88101, Method 118, POC 1

The Bureau continues to operate the PM<sub>2.5</sub> sampler at the Hobbs monitoring site. NMED-AQB will be replacing the current Partisol 2025A series sampler which is 17 years old with a new Partisol 2025i series sampler within the current calendar year. This site is the NMED-AQB designated General Background site. No additional changes are anticipated for 2016 other than state on page 14.

**Particulate Matter PM<sub>2.5</sub> (FRM) Air Quality Control Region 6 (EPA Region 153)**

**Desert View AQS #: 35-013-0021:**

**Desert View PM<sub>2.5</sub> FRM (Primary)**

Parameter 88101, Method 118, POC 1

**Desert View PM<sub>2.5</sub> FRM (Co-Located)**

Parameter 88101, Method 118, POC 2



The Desert View site was recently designated as the bureau’s co-location site using the 2025i series Partisol PM<sub>2.5</sub> samplers. Co-location data into AQS officially started on December 15, 2015. The Desert View 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. However, from recent correspondence with EPA-Region VI, EPA recommended to operate the current Special Purpose Monitor Met-One BAM-1020 PM<sub>2.5</sub> continuous sampler as a SLAMS Primary sampler in conjunction with a co-located Partisol 2025i PM<sub>2.5</sub> FRM sampler. NMED-AQB will be requesting to re-designate the current BAM-1020 continuous PM<sub>2.5</sub> SPM sampler as SLAMS Primary (POC 1) co-located with a Partisol 2025i FRM sampler (POC 2). Since the Desert View monitoring site currently has two Partisol samplers operating as co-location for PM<sub>2.5</sub>, NMED proposes to shut down one of the Partisol samplers and relocate it to the 6Q Las Cruces office monitoring site to replace the aging Partisol 2025A sampler.

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

**Las Cruces PM<sub>2.5</sub> FRM**

Parameter 88101, Method 118, POC 1

The Bureau continues to operate the PM<sub>2.5</sub> FRM sampler at the Las Cruces Office monitoring site. NMED-AQB will be replacing the current Partisol 2025A series sampler which is 17 years old with a new Partisol 2025i series sampler within the current calendar year. This site is the NMED-AQB designated Regional Transport site. No additional changes are anticipated for 2016.

**2.5 Particulate Matter PM<sub>2.5</sub> Continuous**

**2.5.1 Particulate Matter PM<sub>2.5</sub> Continuous (TEOM)**

The Bureau currently operates three TEOM PM<sub>2.5</sub> samplers within the air monitoring network. Two samplers are in the northern half of the state. One located in Taos County at the Taos Volunteer Fire Station site and the second in Santa Fe County at the Santa Fe Airport site. The third sampler is in the southern half of the state in Doña Ana County located at the Desert View monitoring site. NMED-AQB is anticipating replacing the TEOM samplers with BAM-1020 PM<sub>2.5</sub> FEM samplers pending EPA Region VI review and approval of the bureau’s five-year network assessment. Figure 15 indicates the location of the continuous TEOM PM<sub>2.5</sub> sites in northern New Mexico, and Figure 16 indicates the location of the southern New Mexico site.



Figure 15

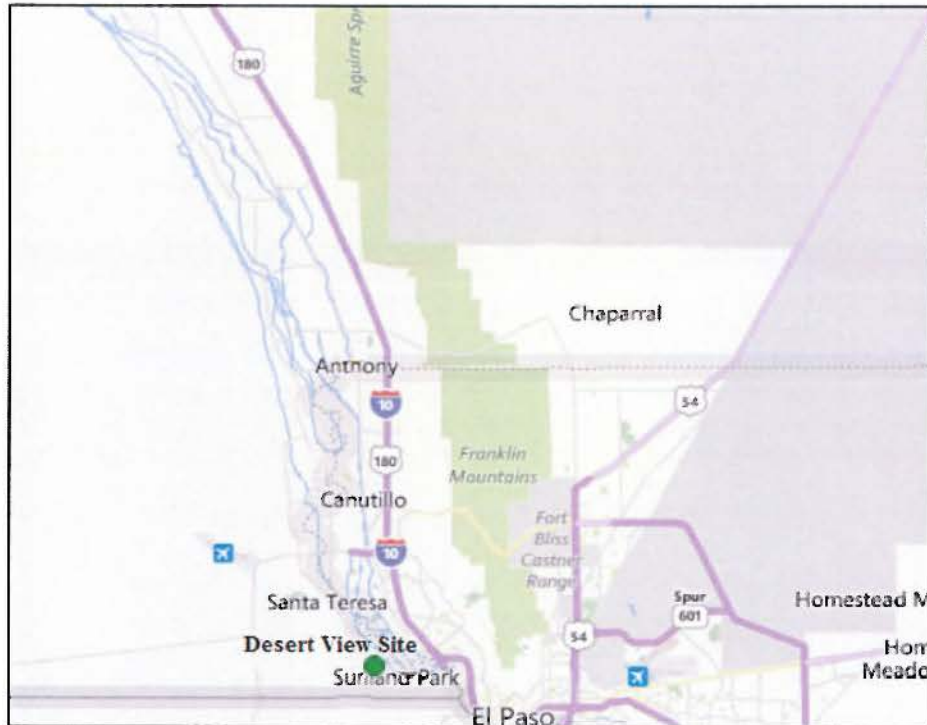


Figure 16

**Particulate Matter PM<sub>2.5</sub> Continuous Air Quality Control Region 3 (EPA Region 157)**

**Taos AQS #: 35-055-0005:**

NMED-AQB had concerns with the tree growth adjacent to the monitoring site, and determined that it is not meeting the siting criteria due to growth of a tree on the adjacent residential property. The Bureau has recently obtained legal permission from the Taos Volunteer Fire Department and NMED's Office of General Counsel to relocate the Taos air monitoring site.

**Taos PM<sub>2.5</sub> Continuous**

Parameter 88502, Method 701, POC 3

The Bureau continues to operate the TEOM PM<sub>2.5</sub> sampler at the Taos air monitoring site. The site will be relocated approximately 45 feet south-southwest of the current location within Taos Volunteer Fire department property.

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

**Santa Fe Airport PM<sub>2.5</sub> Continuous**

Parameter 88502, Method 701, POC 3

The Bureau continues to operate the TEOM PM<sub>2.5</sub> sampler at the Santa Fe Airport air monitoring site.

**Particulate Matter PM<sub>2.5</sub> Continuous Air Quality Control Region 6 (EPA Region 153)**

**Desert View AQS #: 35-013-0021:**

**Desert View PM<sub>2.5</sub> Continuous**

Parameter 88502, Method 701, POC 3

The Bureau continues to operate the TEOM PM<sub>2.5</sub> continuous sampler at the Desert View air monitoring site.



### **2.5.2 Particulate Matter PM<sub>2.5</sub> Continuous (BAM-1020 Sampler)**

The Bureau currently operates two BAM-1020 PM<sub>2.5</sub> samplers within the air monitoring network as SPM's. Both samplers are located in southern New Mexico in Doña Ana County at the Anthony and Desert View monitoring sites. Figure 17 indicates the location of the sites.



Figure 17

### **Air Quality Control Region 6 (EPA Region 153)**

#### **Anthony AQS #: 35-013-0016:**

**Anthony PM<sub>2.5</sub> Continuous (SPM)** Parameter 88101, Method 170, POC 1

The Bureau has installed the Met-One BAM-1020 PM<sub>2.5</sub> sampler as an SPM, which has been operating since April 2014, Parameter 88101, Method 170, POC 1, but it is not currently in AQS due to EPA-R6 requiring extensive review of the PM<sub>2.5</sub> network in the 5-Year Network Assessment.

The Bureau's 5-Year Network Assessment is currently under review by EPA Region VI. However, due to recent discussions with EPA Region VI it has been decided that this sampler be co-located with the BAM-1020 PM<sub>10</sub> sampler from Desert View in order to meet FEM co-location. In addition, NMED-AQB will re-designate the BAM-1020 PM<sub>10</sub> sampler as SLAMS in order for data to be input into AQS.

#### **Desert View AQS #: 35-013-0021:**

**Desert View PM<sub>2.5</sub> Continuous (SPM)** Parameter 88101, Method 170, POC 1

The Bureau continues to operate the Met-One BAM-1020 which has been operating as an SPM since April 2014, but it is not currently in AQS due to EPA-R6 requiring extensive review of the PM<sub>2.5</sub>



network in the 5-Year Network Assessment. The Bureau's 5-Year Network Assessment is currently under review by EPA Region VI. However, due to recent discussions with EPA Region VI it has been decided that this sampler be relocated to the Anthony site in order to meet FEM co-location and both samplers re-designated as SLAMS in order for data to be input into AQS.

## **2.6 Particulate Matter PM<sub>10</sub> Non Continuous Federal Reference Method (FRM)**

### **Air Quality Control Region 6 (EPA Region 153)**

**Anthony PM<sub>10</sub> FRM** Parameter 81102/85101, Method 062, POC 1

The Bureau operates one Wedding PM<sub>10</sub> non-continuous sampler within the air monitoring network which is co-located with a TEOM PM<sub>10</sub> continuous sampler. NMED had requested to replace the Wedding sampler with a Partisol 2025 PM<sub>10</sub> sampler in the 5-Year Network Assessment. NMED's reason for the request is that the Wedding sampler is a High Volume sampler operating at 1.13m<sup>3</sup> while the TEOM, Partisol and BAM-1020 are Low Volume samplers operating at 16.7 lpm (0.0167m<sup>3</sup>). Based on Wedding filter and TEOM sampler results, the two samplers are not providing comparable data. Updating the Wedding sampler with a Partisol sampler should resolve the issue. Figure 18 below indicates the location of the Wedding PM<sub>10</sub> monitoring site. Additionally, EPA has approved NMED's request to add a Met One BAM-1020 PM<sub>10</sub> sampler at the Anthony site.

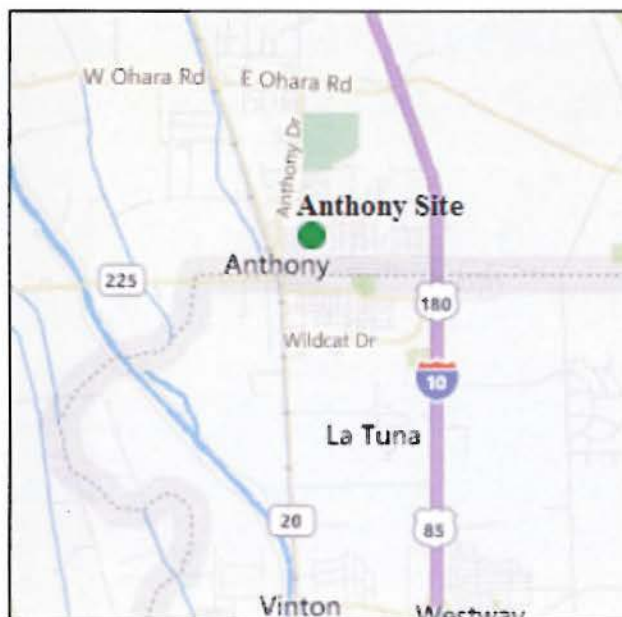


Figure 18

## **2.7 Particulate Matter PM<sub>10</sub> Continuous**

### **2.7.1 Particulate Matter PM<sub>10</sub> Continuous (TEOM Sampler)**

The Bureau requested to replace the PM<sub>10</sub> FEM TEOM continuous monitors in AQCR 6 and AQCR 7 with BAM-1020 samplers in the 2014 ANR. Per EPA letter, dated April 14, 2015 referring to NMED's 2014 Annual Ambient Air Monitoring Network Plan technical comments, EPA Region VI approved NMED's request to replace the TEOM's with the BAM-1020 samplers at 6ZK Chaparral, 6ZM Desert View, 6ZL Holman Road, 6WM West Mesa and 7E Deming Airport monitoring sites.

The replacement took place from October 2015 through April 2016. Figure 19 indicates the locations of the sites. Additionally, EPA approved NMED's request to add a continuous BAM-1020 sampler at the Anthony site, and that NMED may re-evaluate the appropriateness of keeping the PM<sub>10</sub> FEM TEOM monitor. The Bureau has determined that it would not be necessary to continue operating the TEOM monitor since the BAM-1020 PM<sub>10</sub> will be added. Installation of the Anthony site BAM-1020 sampler has been delayed due to power fluctuations being experienced at the site. NMED informed El Paso Electric of the situation and it has since been resolved. NMED-AQB will proceed with adding the BAM-1020 PM<sub>10</sub> sampler and discontinuing the TEOM monitor.

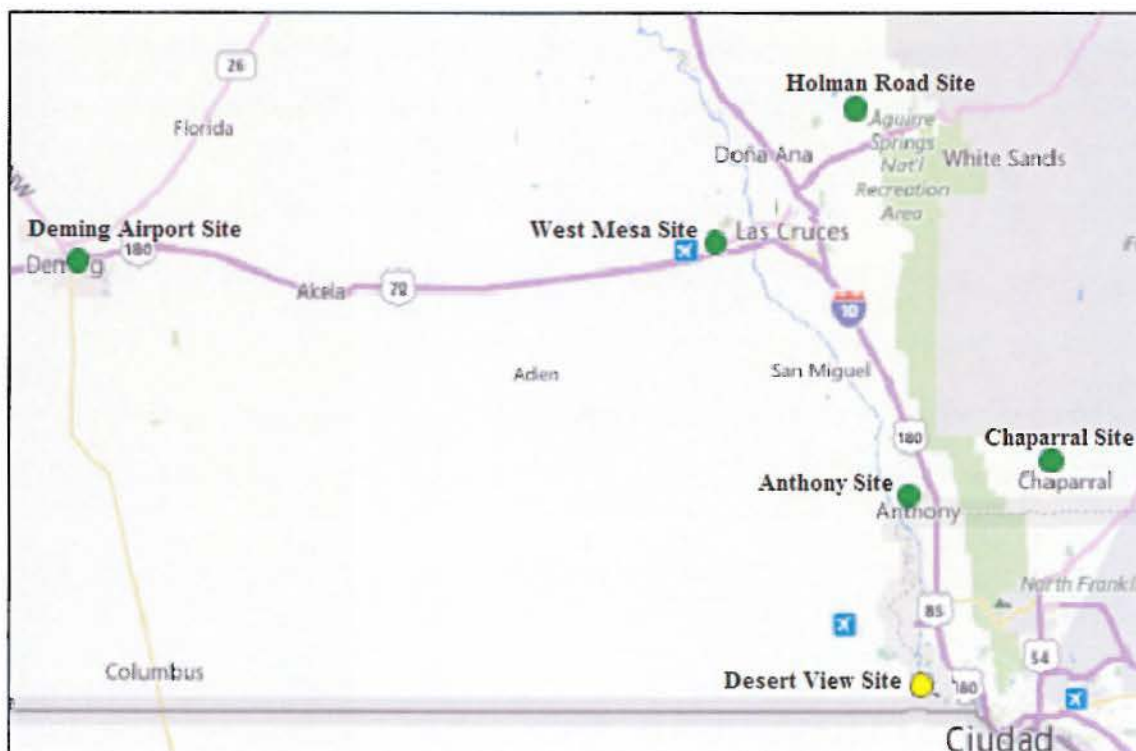


Figure 19

**PM<sub>10</sub> Air Quality Control Region 6 (EPA Region 153)**

**Anthony AQS #: 35-013-0016:**

**Anthony PM<sub>10</sub> Continuous** Parameter 81102, Method 079, POC 2

The Bureau evaluated the use of TEOM PM<sub>10</sub> continuous FEM sampler per EPA letter, dated April 14, 2015 referring to NMED's 2015 Annual Ambient Air Monitoring Network Plan technical comments. The Bureau determined that since EPA Region VI approved adding a BAM-1020 at the Anthony site there was no reason to continue operating the TEOM. In addition the TEOM was experiencing problems with losing the operating program and due to its age was not able to reload the program. NMED discontinued the TEOM sampler on October 10, 2015. Data for the TEOM was last submitted into AQS on October 10, 2015.

**Desert View AQS #: 35-013-0021:**

**Desert View PM<sub>10</sub> Continuous** Parameter 81102, Method 079, POC 1



The Bureau replaced the TEOM PM<sub>10</sub> continuous FEM sampler and installed a Met-One BAM-1020 FEM PM<sub>10</sub> continuous sampler as a SLAMS, per EPA approval letter for the 2014 Annual Ambient Air Monitoring Network Plan technical comments, dated April 14, 2015. NMED discontinued the TEOM sampler on December 9, 2015. Data for the TEOM was last submitted into AQS on December 9, 2015.

### **PM<sub>10</sub> Air Quality Control Region 7 (EPA Region 012)**

#### **Deming Airport AQS #: 35-029-0003:**

**Deming Airport PM<sub>10</sub> Continuous** Parameter 81102, Method 079, POC 1

The Bureau discontinued the TEOM PM<sub>10</sub> continuous FEM sampler on November 3, 2015 and installed a Met-One BAM-1020 FEM PM<sub>10</sub> continuous sampler as a SLAMS. The monitor was approved for replacement per EPA letter, dated April 14, 2015 referring to NMED's 2014 Annual Ambient Air Monitoring Network Plan technical comments. Data for the TEOM was last submitted into AQS on November 3, 2015.

#### **2.7.2 Particulate Matter PM<sub>10</sub> Continuous (BAM Sampler)**

The Bureau installed seven BAM-1020 PM<sub>10</sub> samplers throughout the network during October 2015 through May 2016 per Bureau request and approved for replacement per EPA letter, dated April 14, 2015 referring to NMED's 2015 Annual Ambient Air Monitoring Network Plan technical comments. Six of the seven BAM-1020's replaced aging TEOM PM<sub>10</sub> samplers as SLAMS in the southern air monitoring network. One BAM-1020 PM<sub>10</sub> sampler was installed in northern New Mexico (AQCR-1) as a Special Purpose Monitor (SPM) for PM<sub>10</sub> at the 1ZB Bloomfield site. Figure 20 below indicates the location of the northern New Mexico monitoring site. Figure 19 on page 22 indicates the locations of where the BAM-1020 PM<sub>10</sub> samplers were installed in the southern network. Five were installed in AQCR-6 and one in AQCR-7, they are the following: 6CM Anthony site, 6ZM West Mesa site, 6ZL Holman Road site, 6ZK Chaparral site, 6ZM Desert View, and 7E Deming Airport site.

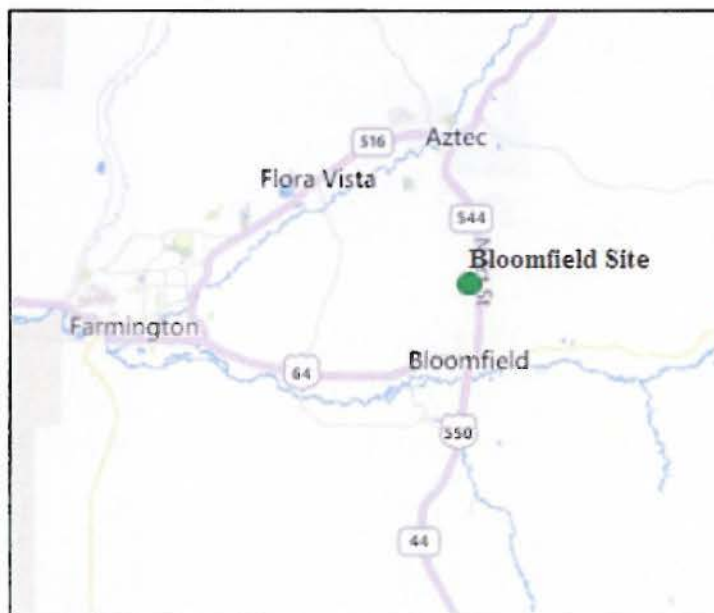


Figure 20



### **PM<sub>10</sub> Air Quality Control Region 1 (EPA Region 014)**

#### **Bloomfield Site      AQS #:35-045-0009:**

**Bloomfield PM<sub>10</sub> Continuous**      Parameter 81102, Method 079, POC 1

The Bureau recently installed a Met-One BAM-1020 FEM PM<sub>10</sub> sampler as a Special Purpose Monitor (SPM) to obtain representative sampling of PM<sub>10</sub> for San Juan County per approval of EPA letter, dated April 14, 2015 referring to NMED's 2014 Annual Ambient Air Monitoring Network Plan technical comments. The sampler was installed on May 5, 2016. Data is currently being monitored and will be input into AQS soon.

### **PM<sub>10</sub> Air Quality Control Region 6 (EPA Region 153)**

#### **Chaparral      AQS #: 35-013-0020:**

**Chaparral PM<sub>10</sub> Continuous**      Parameter 81102, Method 079, POC 2

The Bureau installed a Met-One BAM-1020 FEM PM<sub>10</sub> continuous sampler approved per EPA letter, dated April 14, 2015 referring to NMED's 2014 Annual Ambient Air Monitoring Network Plan technical comments. Installation of the BAM-1020 sampler occurred on April 5, 2016, as well as when data was submitted into AQS.

#### **Desert View      AQS #: 35-013-0021:**

The Bureau installed a Met-One BAM-1020 FEM PM<sub>10</sub> continuous sampler approved per EPA letter, dated April 14, 2015 referring to NMED's 2014 Annual Ambient Air Monitoring Network Plan technical comments. Installation of the BAM-1020 sampler occurred on December 9, 2015, as well as when data was submitted into AQS.

### **PM<sub>10</sub> Air Quality Control Region 7 (EPA Region 012)**

#### **Deming Airport      AQS #: 35-029-0003:**

The Bureau installed a Met-One BAM-1020 FEM PM<sub>10</sub> continuous sampler approved per EPA letter, dated April 14, 2015 referring to NMED's 2014 Annual Ambient Air Monitoring Network Plan technical comments. Installation of the BAM-1020 sampler occurred on November 3, 2015, as well as when data was submitted into AQS.

### **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 is continuing the NADP-sponsored project to collect passive ammonia monitoring data in San Juan County, New Mexico. This project will hopefully continue for the next year. 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 has submitted a development plan for Ozone nonattainment in the southern border region of New Mexico from the FY14 Border Grant.

## **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 Region VI staff early in the process of any plans to make changes to the ambient air monitoring network, other than those described in this review, to ensure that state and federal priorities continue to be aligned.

## **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.

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 NO<sub>2</sub> monitoring:

- Near-road NO<sub>2</sub> monitoring; 1 micro-scale site would be required in Core Based Statistical Areas (CBSA)  $\geq$  500,000 at a location of expected highest hourly NO<sub>2</sub> concentrations sited near a major road with high Annual Average Daily Traffic (AADT) counts.
- Community-wide; required in CBSAs  $\geq$  1 million at a location of expected highest NO<sub>2</sub> concentrations representing neighborhood or larger (urban) spatial scale.

Based on these criteria, no new NO<sub>2</sub> monitors are required in regions under NMED/AQB jurisdiction.

### **5.3 Sulfur Dioxide**

Two federal criteria have been set up for SO<sub>2</sub> monitoring:

- Based on population per CBSA and amount of SO<sub>2</sub> emissions within that CBSA, that is, the Population Weighed Emissions Index (PWEI) and
- Based on individual state contribution to national SO<sub>2</sub> inventory in the 2005 National Emissions Inventory (NEI).

Based on the PWEI criteria, NMED/AQB would not need to deploy any new monitors. NMED/AQB will consider adding an additional SO<sub>2</sub> monitor at the Hobbs site once the Data Requirements Rule for the 1-Hour SO<sub>2</sub> Primary NAAQS has been finalized and a re-evaluation of the SO<sub>2</sub> network is done to determine if monitoring is necessary. 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.



### **SO<sub>2</sub> Data Requirements Rule**

Per EPA Requirement that by July 1, 2016, each air agency is required to identify, for each source area on the list, the approach (ambient monitoring or air quality modeling) it will use to characterize air quality. In lieu of characterizing areas around listed 2,000 tpy or larger sources, air agencies may indicate by July 1, 2016 that they will adopt enforceable emissions limitations that will limit those sources' emissions to below 2,000 tpy.

NMED-AQB has been operating SO<sub>2</sub> monitors at the 1H Sub Station site since 1974 and at the 1ZB Bloomfield site since 1996. Both sites meet the SO<sub>2</sub> Data Requirements Rule and will continue to operate.

### **5.4 Ozone**

Previous to this writing three federal criteria had been set up for ozone monitoring. Although these criteria are no longer required, one is still listed because NMED/AQB set up a new ozone site based on that criterion.

- 1 monitor in an area of high ozone concentration outside of currently monitored MSAs and Metropolitan areas.

### **6.0 Other Issues**

The Bureau filled two vacant (ESS-S) supervisor positions in the Monitoring Section at the end of 2015. In addition the vacant (ESS-O) operational position was filled in February 2016. At present all Monitoring Section positions are filled.

A draft of this document was made available to the public in June of 2016, at <http://www.nmenv.state.nm.us/aqb/>. Any comments pertaining to this document should be sent to the following contact:

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