

Albuquerque Environmental Health Department (EHD)
Air Quality Division (AQD)
Ambient Air Monitoring Section
2008 Annual Network Review for Ambient Air Monitoring

Under 40 CFR, Part 58, Subpart B, The City of Albuquerque Air Quality Division (AQD) is required to submit an annual monitoring network review to the Environmental Protection Agency (EPA) regional office in Dallas, Texas. The network plan describes the framework of the local air quality surveillance system, presents monitoring results over the past three years, provides comparisons to national standards, and discusses future plans. The annual monitoring network plan must be made available for public inspection for at least 30 days prior to submission to EPA.

The following document represents the current network plan and proposed changes to the AQD Air monitoring network for 2008. These proposed changes incorporate new rules requirements from CFR 40 parts 53 & 58 that were published October 17, 2006 and became effective December 18, 2006, as well as the new Ozone NAAQS¹. Future NCore² implications are also discussed under each section. Lack of funding for NCore implementation is a serious issue. If Clean Air Act (CAA) section 103-type funding is not provided in the coming year, NCore implementation will not be complete by the 2010 scheduled start date.

This document represents the commitment of the AQD to effectively protect the health of the citizens of Albuquerque-Bernalillo County³ through ambient air monitoring, by using the best affordable technology, and by communicating the data collected as quickly and accurately as possible. However, elimination of the CAA 103 grant and reductions in CAA 105 grant funding force us to reluctantly propose significant reductions in the coming year. We will continue to meet our minimum requirements for each criteria pollutant. The proposed changes will be discussed in each section and then summarized in tables at the end of this document.

The map in Figure 1 shows the physical location of all current monitoring sites currently operated by the Air Quality Division. Sites 2ZH (North Valley), 2ZV (South Valley), and 2ZF (Double Eagle) are in Bernalillo County. All other sites are within the city limits of Albuquerque. Site designation corresponds to Table 1, Column 2, which lists the ambient air monitoring sites and the monitoring equipment operated at each site.

Table 1, Column 1 is the "AQS Site ID#," a unique identification number assigned to each monitoring site in the network. The AQS (Air Quality System) is a national air monitoring database maintained by the EPA. Data collected from monitoring sites are input into the AQS database and made available to the public within 90 days following the end of each calendar quarter as required in the new monitoring regulations. <<http://www.epa.gov/ttn/airs/aqsdatamart/access.htm>> Column 2 gives the local site

¹ National Ambient Air Quality Standard

² The National Core Monitoring Network

³ Excluding Native American and Pueblo Lands within the County.

designation, name, and location. Site Longitude and latitude are in columns 3 and 4. Columns 5 through 9 list the monitors at each site and their associated parameters. Site photographs accompany the hard-copy version of this report on CD. During the public review period monitoring site photographs can be downloaded from the City of Albuquerque – Air Quality Division website <http://www.cabq.gov/airquality/>

Population Statistics

Albuquerque/Bernalillo County, including Rio Rancho and Los Lunas is the State’s largest Metropolitan Statistical Area (MSA). According to 2006 U.S. Census Bureau estimates the population of the metropolitan statistical area (MSA) which includes the adjacent counties of Sandoval, Valencia, and Torrance is approximately 816,811 (41% of the State) and is rapidly growing. As the regional center for employment, advanced education, retail commerce, and medical treatment, Albuquerque experiences extensive commuter traffic. The junction of major Interstate 25 (north/south) and Interstate 40 (east/west), adds significant heavy transport traffic between the port of Los Angeles and the East Coast, and between the US-Mexico Border and Denver.

Future – For funding reasons, the AQD proposes to discontinue Airs site 35-001-1014 (local designation “Corrales, 2ZL”). The site was established during a time of major commercial development which is now complete, reducing the amount of exposed surface area. While still subject to wind-blown PM from development occurring further north and west, monitoring for the area will depend on data from AIRS site 35-001-1013. PM and Ozone data are similar to other sites in the network so this proposed change will not have a detrimental effect

In Figure 1 indicates this closure with an “X” over the site. In Table 1, proposed **monitoring reductions** are in red and proposed **monitoring additions** are in blue. A ~~red~~ **strikeout** indicates complete elimination.

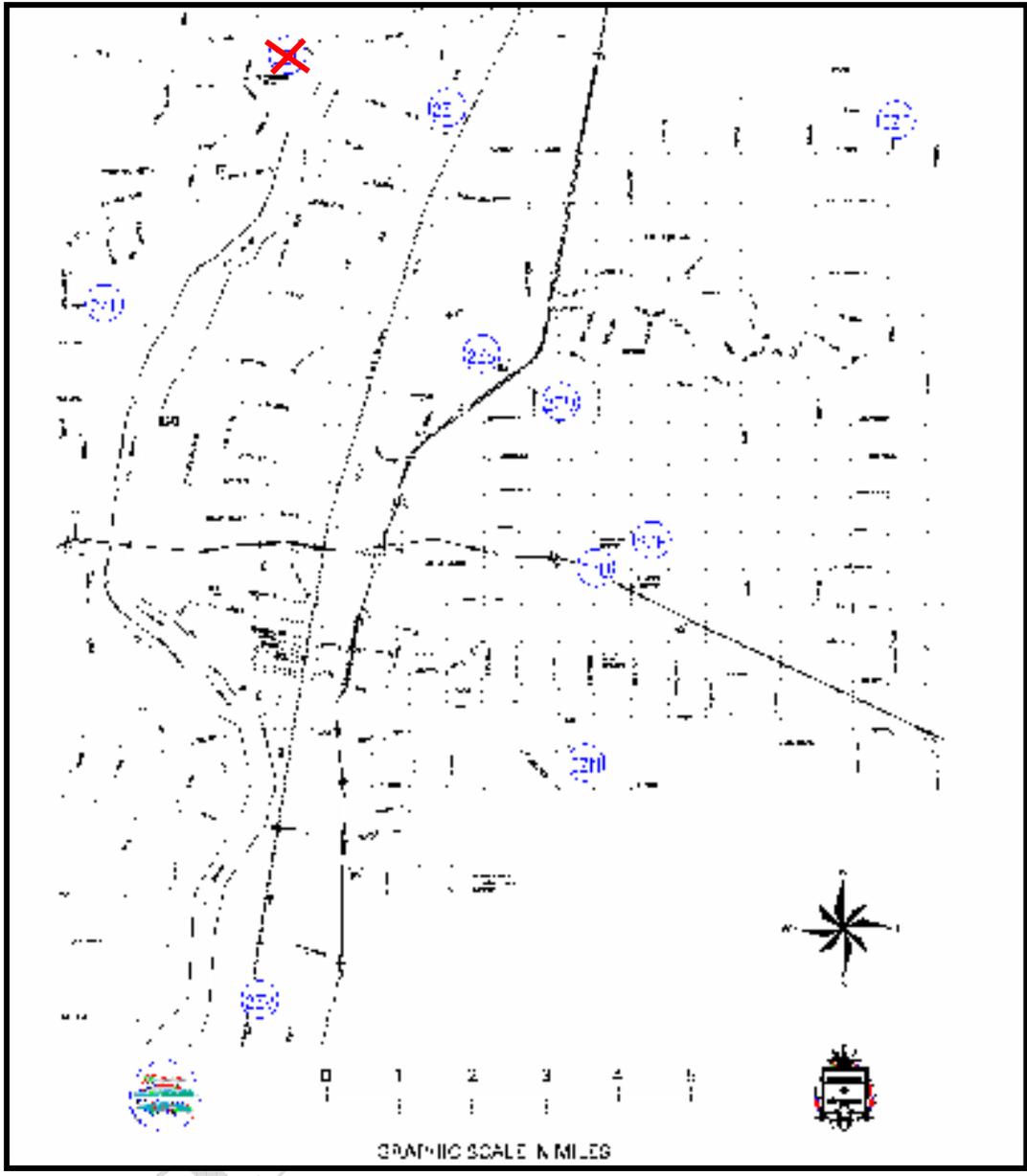


Figure 1: Albuquerque Ambient Air Quality Monitoring Network, May, 2007

Table 1 Albuquerque Ambient Air Monitoring Network

AQS Site ID#	Address/ Location	Latitude	Longitude	Pollutants Measured	Station Type	Sampling Method	Analysis	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA
35-001-0019	2ZE Uptown-Zuni 2421 Mesilla Ave. NE	-106.564	35.10728	O3	SLAMS	44201-1	UV photo-metric.	continuous	Population Exposure	Neighborhood	Yes	Abq.
				CO	SLAMS	42101-1	IR (Non-dispersive)	continuous seasonal	Population Exposure	Neighborhood	Yes	Abq.
				PM10	Special Purpose	81102-3	TEOM	continuous	Population Exposure	Neighborhood	Yes	Abq.
				PM2.5	Special Purpose	88101-3	TEOM	continuous	Population Exposure	Neighborhood	No	Abq.
35-001-1012	2ZF Double Eagle Elementary 8901 Lowel NE	-106.508	35.1852	O3	SLAMS	44201-1	UV photo-metric.	continuous /seasonal	Highest Concentration	Urban	Yes	Abq.
				PM2.5	SLAMS	81101-3	TEOM	continuous	Population Exposure	Neighborhood	Yes	Abq.
35-001-1013	2ZH North Valley 9819a Second Street NW	-106.614	35.19324	O3	SLAMS	44201-1	UV photo-metric.	continuous /seasonal	Population Exposure	Neighborhood	Yes	Abq.
				PM10	SLAMS	81102-3	TEOM	continuous	Population Exposure	Neighborhood	Yes	Abq.
				PM2.5	Special Purpose	88101-3	TEOM	continuous	Population Exposure	Neighborhood	No	Abq.
				CO	SLAMS	42101-1	IR (Non-dispersive)	continuous seasonal	Population Exposure	Neighborhood	Yes	Abq.
				Visibility	Other	63101	011	continuous	Special Study	NA	NA	Abq.
				Total Carbon	Other	88313	866	continuous	Special Study	NA	NA	Abq.
35-001-1014	Proposed shut-down 2ZL Corrales 10155 Coors Road NW	-106.649	35.2022	O3	SLAMS	44201-1	UV	continuous	Population Ex	Nbrhd	Yes	Abq.
				CO	SLAMS	42101-1	IR	continuous seasonal	Population Exposure	Neighborhood	Yes	Abq.
				PM10	SLAMS	81102-1	Gravimetric	Daily 1/1	Population Exposure	Neighborhood	Yes	Abq.
				PM10 collocated	SLAMS	81102-2	Gravimetric	Daily 1/6	Population Exposure	Neighborhood	Yes	Abq.
35-001-0023-NCORE	2ZM Del Norte 4700a San Mateo NE	-106.586	35.13426	O3	SLAMS	44201-1	UV photo-metric.	continuous /seasonal	Population Exposure	Neighborhood	Yes	Abq.
				CO	SLAMS	42101-1	Non-dispersive IR	continuous seasonal	Population Exposure	Neighborhood	Yes	Abq.
				NO2	SLAMS	42602-1	Chemluminescence	continuous	Population Exposure	Neighborhood	Yes	Abq.
				PM10	SLAMS	81102-1	Gravimetric	Daily 1/6	Population Exposure	Neighborhood	Yes	Abq.
				PM2.5	SLAMS	68101-1	Sequential	Daily 1/3	Population Exposure	Neighborhood	Yes	Abq.
				PM2.5 collocated	SLAMS	68101-2	Sequential	Daily 1/6	Population Exposure	Neighborhood/urban	Yes	Abq.
				Speciation	SLAMS	68103		Daily 1/6	Special Study	NA	NA	Abq.
				Visibility	Other	63101	011	continuous	Special Study	NA	NA	Abq.
EC/OC	Other	88313	866	continuous	Special Study	NA	NA	Abq.				

AQS Site ID #	Address/ Location	Latitude	Longitude	Pollutants Measured	Station Type	Sampling Method	Analysis	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA
35-001-0024	2ZN SE Heights 6000 Anderson Avenue SE	-106.579	35.0631	O3	Special Purpose	44201-1	UV photometric.	continuous	Population Exposure	Neighborhood	Yes	Abq.
				CO	SLAMS	42101-1	IR	continuous seasonal	Population Exposure	Neighborhood	Yes	Abq.
				NO2	Special Purpose	42602-1	Chemluminescence	continuous	Population Exposure	Neighborhood	Yes	Abq.
				PM2.5	SLAMS	88101-1	Sequential	Daily 1/3	Population Exposure	Neighborhood	Yes	Abq.
35-001-0026	2ZS Singer 3700 Singer NE	-106.605	35.1443	PM10	Special Purpose	81102-3	TEOM	continuous	Highest Concentration	Neighborhood/ Source-specific	Yes	Abq.
				PM10	SLAMS	81102-1	Gravimetric	Daily 1/1	Highest Concentration	Neighborhood/ Source-specific	Yes	Abq.
				PM10 collocated	SLAMS	81102-2	Gravimetric	Daily 1/6	Highest Concentration	Neighborhood/ Source-specific	Yes	Abq.
35-001-0027	2ZT Taylor Ranch 5100 Montano Blvd NW	-106.697	35.1539	O3	SLAMS	44201-1	UV photometric.	continuous /seasonal	Population Exposure	Neighborhood	Yes	Abq.
				PM2.5	Special Purpose	88101-3	TEOM	continuous	Population Exposure	Neighborhood	No	Abq.
35-001-0028	2ZU San Pedro 2200 San Pedro NE	-106.577	35.10263	CO	SLAMS	42101-1	Non-dispersive IR	continuous seasonal	Highest Concentration	Microscale	Yes	Abq.
				PM10	SLAMS	81102-1	Gravimetric	Daily 1/6	Population Exposure	Neighborhood	Yes	Abq.
35-001-0029	2ZV South Valley 201 Prosperity SW	-106.657	35.01708	O3	SLAMS	44201-1	UV photometric.	continuous /seasonal	Population Exposure	Regional Scale	Yes	Abq.
				CO	SLAMS	42101-1	Non-dispersive IR	continuous seasonal	Population Exposure	Regional Scale	Yes	Abq.
				PM10	Special Purpose	81102-3	TEOM	continuous	Other	Other	No	Abq.
				PM2.5	Special Purpose	88101-3	TEOM	continuous	Other	Other	No	Abq.
				Visibility	Other	63101	011	continuous	Special Study	NA	NA	Abq.
				EC/OC	Other	88313	866	continuous	Special Study	Other	NA	Abq.
TBD	2ZW Westside 11850 Sunset Gardens SW	-106.761	35.0641	O3	Local	44201-1	UV photometric.	continuous	Special Study	Neighborhood	Yes	Abq.
				PM10	Local	88101-3	TEOM	continuous /seasonal	Special Study	Neighborhood	No	Abq.

Ground Level Ozone (O3)

Based on population, Table D-2 of Appendix D to Part 58, 40 CFR specifies a minimum of two (2) SLAMS (State and Local Air Monitoring Stations) ozone monitors.

Current – Currently the AQD exceeds the minimum requirements with eight (8) ozone monitors, seven (7) categorized as SLAMS.

The MSA experiences high levels of Ozone during the summer and with the newly lowered NAAQS, non-attainment is a serious consideration. Our first declaration in 2009 will probably not show exceedence of the standard but in 2010 the question is open.

The lack of large industrial sites in Albuquerque suggests that the aforementioned mobile source traffic is the source of Ozone precursors. We also suspect that Ozone transport is producing a very elevated “floor” under the locally produced Ozone. Our high elevation above sea level means thinner air. Ozone chemistry may vary with lower atmospheric pressure. Extremely low-humidity creates clear skies that filter out very little UV from sunlight. Elevations within the city vary from 4900 feet to over 6500 feet, and the highest ozone levels tend to occur at our higher monitoring sites. This could result from elevation related affects or from terrain (air mass trapped against the Sandia Mountain).

Future – Unfortunately, all of the ideas in the previous paragraph are conjecture. To produce effective reduction strategies (should non-attainment occur), AQD needs solid data that characterizes the problem. As a non-industrial city, our findings about “transport” could also be significant to other parts of the region. The AQD would very much like to acquire equipment to monitor VOCs at various locations, times of day, weather conditions, and seasons. More NOx monitors would also be useful. (But as noted in the NOx section below, an existing monitor will actually be discontinued.)

Two of the current eight Ozone monitors will also be discontinued, preserving locations that are producing the highest readings.

We will relocate one monitor near the AQD building on the West side of Albuquerque. (Local designation 2ZW) Though this site is far from any potential sources (traffic) and is predominantly upwind of the city in summer months (see Figure 2), in trial runs the maximum Ozone levels at this site higher were larger than our previous high-site. Because this suggests “Ozone transport” we intend to operate the other discontinued ozone monitor at a far west location during the 2008 Ozone season. The relocated monitors are for special study. They will not be declared SLAMS and neither site be assigned an AIRs number at this time.

As a cost reduction measure in reaction to reduced funding, the AQD proposes to operate Ozone monitors seasonally. Our proposed monitoring season would be from April 1 through October 30. The Ozone monitors at our current “high” site and at the designated NCore site would continue to operate year around.

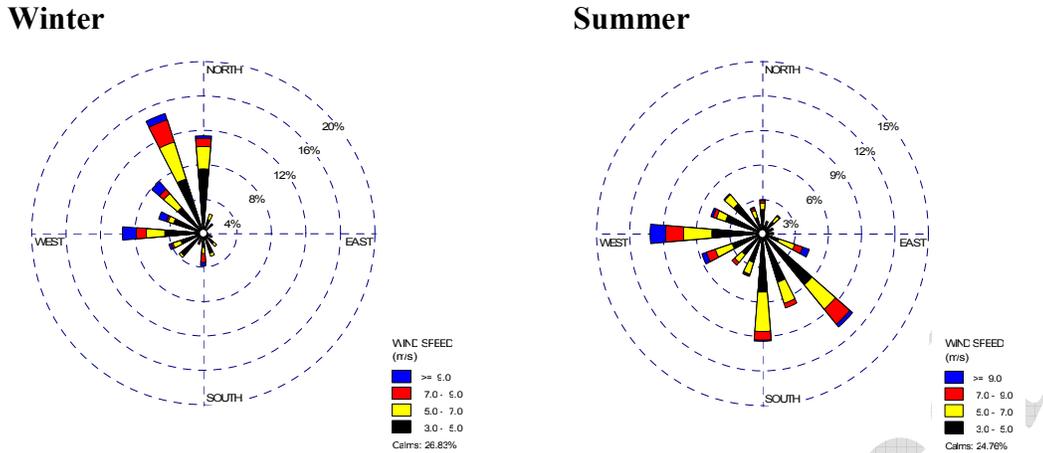


Figure 2: Seasonal Wind Roses for Albuquerque

PM_{2.5}

According to Table D-5 of Appendix D to Part 58, 40 CFR two SLAMS PM_{2.5} monitors are required in Albuquerque.

Current – AQD operates six PM_{2.5} monitoring sites in Albuquerque-Bernalillo County. (Table 2) Of seven (7) total monitors, three (3) are SLAMS.

Two sites (35-001-0023 and 35-001-0024) operate Partisol 2025 sequential samplers with 2.5 micron inlet cutoff to record 24-hour averages PM_{2.5}. These samplers are Federal Reference Methods (FRM) and are comparable to the NAAQS. Both sites operate on a 1/1 (every day) schedule and the first site (35-001-0023) has a collocated sampler that operates every sixth day (1/6).

Four additional sites monitor PM_{2.5} continuously using a 2.5 micron inlet TEOM⁴ in series with a FDMS⁵. The FDMS provides separate measurements of solid and volatile PM_{2.5} which helps in understanding the sources of Ozone precursors. Because the TEOM is not a Federal Equivalent Method (FEM) for PM_{2.5}, the data from these monitors are used for the Air Quality Index (AQI) but are not comparable to the NAAQS.

The continuous monitors in Table 2 and 3 are used for daily Air Quality Index (AQI) reporting. The monitors at these locations report hourly averages that are sent to EPA's AIRNOW web page for real-time Air Quality particulate mapping.

Future – Site 35-001-0029 houses continuous PM₁₀ and PM_{2.5} monitors, but it does not meet siting criteria for PM monitoring. (See <http://www.gpoaccess.gov/cfr/index.html>) In the past year, paving of a large commercial lot adjacent to the monitoring site removed a large hurdle, putting siting criteria within reach. Bernalillo County is working on an area upgrade and use changes that will make the data from both PM monitors more

⁴ Tapered Element Oscillating Microbalance

⁵ Filter Dynamic Measurement System

useful. The PM₁₀ TEOM is a FEM and will be comparable to the NAAQS but the PM_{2.5} TEOM is not an FEM and will still not be comparable.

Due to decreased funding, the AQD proposes to change the operating schedule of the Partisol 2025 sequential samplers from every day to every third day. We will regret the loss of daily FRM data, but the reduction will lower filter, lab and operating costs. With EPA approval, this change will be made in October, though there is a question about whether AIRS 30-001-0023 can operate 1/3 once it becomes an active NCore site.

The AQD has ordered a Thermo 1405 dichotomous sampler that will be installed at Del Norte (AIRS 35-001-0023), the designated NCore site. The unit is in the certification process to become an FEM but the Manufacturer's schedule has slipped several times. The 1405 has PM₁₀ and PM_{2.5} inlets on dual channels and an FDMS that will alternately serve both channels. The PM10 side will operate in parallel with the existing GMW⁶ 24-hour filter-based unit (FRM) but will provide continuous data which is new to Del Norte. This instrument should meet the NCore requirement for monitoring PM_{10-2.5}. The start date is dependent upon delivery but anticipated operation is early 2009.

The PM₁₀ continuous monitor from AIRS 35-001-0019 will be converted to measure PM_{2.5} and will be relocated to AIRS 35-001-1012.

⁶ General Metal Works

Table 2: AQD PM_{2.5} Monitoring Sites

PM2.5 FRM Sites	Current Sampling schedule	Proposed Sampling Schedule	2005 Daily 98 th %	2006 Daily 98 th %	2007 Daily 98 th %	Design Value (% Daily NAAQS)	2005 Annual Arithmetic Mean	2006 Annual Arithmetic Mean	2007 Annual Arithmetic Mean	Design Value (% Annual NAAQS)	Co-located with continuous PM2.5 Sample Yes or No
Del Norte 0023	1/1	1/3	19	18	21	51%	7	7.6	6.5	46%	No
Del Norte 0023 co-locate	1/6	1/6	21	13	121	51%	7	6.9	5.8	47%	No
SE Heights 0024	1/1	1/3	14	14	21	50%	6.19	6.5	6.4	47%	No
Uptown-Zuni 0019	Continuous	Continuous	22	18	30	NC	7.1	7.8	8.5	NC	
Double Eagle 1012	New	Continuous				NC				NC	
North Valley 1013	Continuous	Continuous	20	26	30	NC	8.6	9.6	11.9	NC	
Taylor Ranch 0027	Continuous	Continuous	14	20	18	NC	5.1	7.6	6.7	NC	
*South Valley 0029	Continuous	Continuous	30	27	39	NC	9.6	9.7	11.2	NC	

*Site 35-001-0029 does not meet siting criteria for PM_{2.5} but the data is used for the Air Quality Index.

Table 3: AQD Continuous PM_{2.5} Sites

Continuous PM2.5 AQI sites	AQS #	Current Sampling Frequency	Proposed Sampling Frequency
Uptown-Zuni	35-001-0019	Hourly	Hourly
Double Eagle Elementary	35-001-1012	-	Hourly
North Valley	35-001-1013	Hourly	Hourly
Taylor Ranch	35-001-0027	Hourly	Hourly
*South Valley 0029	35-001-0029	Hourly	Hourly
Westside	NA	-	Hourly

*Site 35-001-0029 does not meet siting criteria for PM_{2.5} but the data is used for the Air Quality Index.

PM₁₀

Based on population, 40CFR, Part 58, Table D-4 of Appendix D specifies one-to-two sites as the minimum requirement for low concentration MSAs.

Current – The AQD currently exceeds the requirement by monitoring PM₁₀ at seven sites listed in Table 1. Four sites have continuous monitors (TEOMs) and four sites use FRM filter-based monitors to measure 24-hour averages. Two of the filter-based sites have collocated samplers.

Because of terrain, extremely dry climate, and unusual weather patterns, Albuquerque frequently has very different wind conditions in various parts of the city. Westerly winds are the assumed weather pattern but that is only true during certain seasons of the year. (refer back to Figure 2) East canyon winds accelerate down-slope on the Sandia Mountain at speeds up to 65 miles per hour, blasting the NE quadrant of the city before slowing and dispersing. The valley experiences North-South flow with a diurnal pattern. The west side of the city has very fine soils and large tracts of native vegetation are being removed for development. These factors can produce higher PM levels with any wind direction, but particularly in the winter months with winds from the North and West quadrant.

In previous years, most of our AQI days result from high PM₁₀ values. PM₁₀ data is used to report the AQI, to accurately portray PM in neighborhoods, to enforce our dust control regulation, and to issue high wind advisory or health alerts to protect the population. (For sensitive populations, extremely high hourly values are a threat, even if the 24 hour standard is not exceeded.)

Future – As a result of insufficient grant funding the AQD proposed to reduce the number of monitors in the coming year. With approval from EPA Region VI, two collocated PM₁₀ monitors (at site 35-001-1014) and one PM₁₀ monitor (at site 35-001-0028) will be discontinued, and a special purpose continuous monitor will be relocated from AIRs 35-001-0019 to AIRs 35-001-1012 where the inlet will be changed to monitor PM_{2.5}. This proposed network reconfiguration (Table 4) still exceeds the minimum requirement of 40CFR, Part 58 for low concentration MSAs.

The AQD will also operate a PM₁₀ TEOM near our AQD offices on the west side of the city. The site is on a high ridge made up of sand and fine siltaceous PM transported from the Rio Puerco in past centuries. As urban development moves westward, vegetation is being removed. The unstable surface is exposed, and highly vulnerable to wind-blown PM. For the time being, this site will not be declared a SLAMS, though it would meet siting criteria.

Table 4. Proposed Future PM₁₀ Monitoring Configuration

PM10 Sites	Current Sampling Schedule	2005 Annual Max Conc.	2006 Annual Max Conc.	2007 Annual Max Conc.	3 year avg. PM10 Conc.	2005-7 Percent of standard	Proposed Sampling Schedule
North Valley 1013	Continuous	31	32	26	30	20%	Continuous
Del Norte 0023	1/6	20	20	16	19	12%	1/6
Singer - 0026	1/6	37	43	39	40	26%	1/6
Singer - 0026 collocate	1/6	38	45	43	42	28%	1/6
Singer 0026	Continuous	37.1	43.3	39.0	39.8	27%	Continuous
*South Valley 0029	Continuous	35	39	35	36	24%	Continuous
West Side	New, special study						Continuous

*Site 35-001-0029 does not meet siting criteria for PM₁₀ but the data is used for the Air Quality Index.

Sulfur Dioxide (SO₂), Nitrogen Oxides (NO₂, NO_y), and Carbon Monoxide (CO)

Under 40 CFR part 58, appendix D4, there are no minimum requirements for the number of SO₂, NO₂, or CO sites, however, discontinuation of existing sites must be approved by the EPA Regional Administrator.

Sulfur Dioxide (SO₂)

Future – The AQD currently does not monitor SO₂. While there are large sources in the state, none are close to Albuquerque and emissions are reduced by dispersion over distance. If EPA funding is available, the AQD will install an SO₂ monitor at AIRs site 35-001-0023 to meet NCore requirement.

Oxides of Nitrogen (NO₂, NO_y)

Current – The AQD monitors NO, NO₂ and NO_x at two sites. One of these (AIRS 35-001-0023) is the proposed NCore location.

In the past NO_y⁷ monitoring was conducted at a third site on an experimental basis but the activity was discontinued at the end of the project. That unit is now obsolete and would not meet current requirements. If EPA funding is available, a new NO_y monitor will be purchased and installed at the NCore site in 2009, replacing the existing NO_x monitor.

With the new Ozone NAAQS, ozone levels are a pending problem. Significant Ozone formation occurs in summer months, and studies (by Sonoma Technology) indicate that the area is VOC limited. Suspected NO_x sources include mobile (both on and off road), the Airport, and methane combustion for residential and water heating.

⁷ NO_y are highly reactive oxides of Nitrogen, and are the most likely to be involved in the formation and breakdown of Ozone.

Future – The AQD should be acquiring monitoring data to characterize NO_x sources and distribution. However, based on funding constraints, the AQD proposes to discontinue the existing NO_x monitor located at AIRs site 35-001-0024.

Carbon Monoxide (CO)

Current – The AQD currently operates six (6) CO monitors. Albuquerque/Bernalillo County was declared non-attainment for CO from 1978 – 1996. While levels have been controlled, the city remains in maintenance status. In 2006, the AQD requested permission to operate five of the monitors during winter months only (October – March), and the change was approved by EPA Region VI. The monitor that historically recorded the highest CO readings (AIRs site 35-0010-0028) will continue to operate year around, as will the conventional CO monitor at the designated NCore site (AIRs 35-001-0023).

Future: – The AQD proposes to discontinue two CO monitors at AIRs 35-001-1014 and AIRs 35-001-0024. One of the monitors will be relocated to North Valley (AIRs 35-001-1013) which is close to a major traffic arterial. Adding this monitor will also give North Valley equivalent instrumentation to South Valley, the two “bookends” of our monitoring area.

The designated NCore site is required to have a high-sensitivity CO monitor, but such a monitor can only be purchased if EPA provides funding for NCore.

Non-SLAMS Special Purpose Monitors

PM_{2.5} Chemical Speciation

Current – CFR Part 58 regulations require the operation of a speciation sampler at approved NCore sites. The Del Norte (AIRs 35-001-0023) site in Albuquerque is the proposed NCore site for the state of New Mexico and has operated a Partisol 2300 speciation sampler since 2002. Speciation filters are sent to RTI, the EPA national analysis contractor in North Carolina, and data is reported to the AQS. The AQD also uses this data in local studies to correlate with data from other samplers.

Future: – In the past year the older Partisol 2300 sampler experienced increasing frequency of mechanical and electrical failures. In the near future it will be replaced by a MetOne SuperSass provided by EPA that will operate on the same 1/6 schedule. We also anticipate receipt of a URG EC/OC sampler which will work in conjunction with the MetOne.

Up to now, 100% funding for the speciation effort came under our CAA 103 PM_{2.5} grant. When the CAA 103 funding goes away in March of 2009, the cost is supposed to be picked up by our CAA 105 Base Grant. However, CAA 105 funding requires local match, and the Base Grants are also shrinking. Funding uncertainty creates some doubt about the future of speciation sampling.

NCore requires PM_{10-2.5} speciation monitoring. AQD is currently not equipped to do this. The new SuperSass has additional channels but is not designed to allow separate size-

discriminating inlets. We would welcome input from EPA on whether and how PM_{10-2.5} monitoring can be accomplished and if commensurate funding will be provided.

Visibility

Current – Albuquerque-Bernalillo County does not have any Class I areas⁸. It exhibits good visibility much of the year but does experience a brown cloud in winter months, particularly during temperature inversions. For that reason, the AQD currently operates Nephelometers and Aethelometers at three sites (Airs 35-001-0023, AIRs 35-001-1013, and 35-001-0029). These instruments provide another source of PM_{2.5} measurements, and the data has been used locally to identify the contribution of residential wood burning smoke to the “brown cloud” during winter months

Future: – Nephelometer and Aethelometer data has been reported to AQS. Despite the value of this information, Nephelometers and Aethelometers will have to be discontinued in March 2009, until such time as increased funding is provided by EPA.

Community Scale Monitoring (CSM)

Current – In the past the AQD has participated previously in CSM studies, but there were none in 2005 - 2006. A CSM study began in September of 2007 and will last for one year, until September of 2008. Sampling is conducted at 3 locations (Airs 35-001-0023, AIRs 35-001-1013, and 35-001-0029). Samples are analyzed for Carbonyls (Method TO-11), Semi-volatiles (Method TO-13), VOCs (Method TO-15), and heavy metals (by ICP-MS). Some limited vertical data will also be acquired by instruments mounted on tethered balloons, to support modeling and risk assessment. (Reference the cover story in the March 2008 “Air Shed.”

http://plaza.cabq.gov/QuickPlace/aqd/PageLibrary8725707400726BEA.nsf/h_8C89627BD2E15DE58725707400795A0A/9C5DD0742806949B872574090057FCBC/?OpenDocument.) Sampling occurs on a 1 in 6 schedule synchronized with all other instruments operating on that cycle, particularly the Speciation monitor. This allows the maximum use of network data for analysis and comparisons.

Future: – The AQD would like to become part of the national Air Toxics network so these measurement could be continued over many years. In particular, the TO13 method is the best means to track smoke from residential wood heating and forest fires and controlled burns. In response to an inquiry, Region VI personnel said they would support our request if a formal proposal was submitted.

Mercury

Future: – The AQD would also like Albuquerque-Bernalillo County to become part of the Mercury Deposition Network, due to transport issues, especially since dry-deposition Mercury monitors are now coming on-line. The state of New Mexico has significant mercury sources (coal-fired EGUs). The one existing Mercury Deposition Network monitoring site in New Mexico (further from the EGUs than Albuquerque) reports the highest mercury deposition levels in the US. The vast majority of the State’s waters carry

⁸ AQCR 152 is in the Albuquerque MSA. It may be impacted by the Albuquerque Airshed, just as we were impacted by the 2000 fires.

warnings for mercury content in fish, so mercury deposition must be occurring by some mechanism, and dry deposition seems more likely than wet.

Wet and dry-deposition monitors in Albuquerque-Bernalillo County would provide a second data point and clarify whether the high readings are an anomaly of minimal and infrequent precipitation. Mercury monitoring and extended Air Toxics monitoring would require increased level of EPA funding.

Draft/Proposed

Albuquerque – Bernalillo County Network Changes

Table 5 shows the network before this review.

Table 5: Albuquerque-Bernalillo Co. Air Monitoring Stations and Equipment up to 2008

Station Description				Full Met	Gases			PM10			PM2.5			Other				Community Scale Monitoring
AIRs Number	Site Code	Station Name	Station Address		Ozone	CO	NOx	Cont. (TEOM)	FDMS	24 Hour Hi Vol.	Cont. (TEOM)	FDMS	Sequential	Speciation	Nepha-lometer	Aethe-lometer	Pollen	TO-11/13/15, metals
35-001-0019	2ZE	Uptown Zuni Park	2421 Mesilla NE	p	API 400A	API 300		R & P 1400	R & P 8500		R & P 1400	R & P 8500					Burkhard	
35-001-1012	2ZF	Double Eagle Elementary	8901 Lowel NE	X	API 400A													
35-001-1013	2ZH	North Valley	9819 2nd St. NW	X	API 400A			R & P 1400			R & P 1400	R & P 8500			Optec NGN-2	MAPP		07 - 08
35-001-1014	2ZL	Corrales	10155 Coors NW	X	API 400A	API 300				GMW (2-Col.)								03 - 04
35-001-0023	2ZM	Del Norte	4700 San Mateo NE	X	API 400A	API 300	API 200A			GMW		Partisol 2025 Col. 1/1, 1/6	Partisol 2300 1/6	Optec NGN-2	McGee AE2			02 - 04 07 - 08
35-001-0024	2ZN	SE Heights	6000 Anderson SE	X	API 400A	API 300	API 200A					Partisol 2025 1/1						
35-001-0026	2ZS	Singer	3700 Singer NE	X				R & P 1400		Partisol 2025s (2-Col)								
35-001-0027	2ZT	Taylor Ranch	5100 Montano NW	X	API 400A						R & P 1400	R & P 8500					Burkhard	
35-001-0028	2ZU	Uptown San Pedro	San Pedro & AMAFCA NE	p		API 300				GMW								
35-001-0029	2ZV	South Valley	201 Prosperity SE	X	API 400A	API 300		R & P 1400			R & P 1400	R & P 8500			Eco-Tech	McGee AE2		2002 07 - 08
NCORE SLAMS Other Seasonal																		

Table 6 shows the proposed changes for 2008. Summary of changes:

- One site (35-001-1014) is completely discontinued.
- Three PM10 FRM monitors at two sites (35-001-1014 & 0028) are discontinued.
- One PM10 continuous monitor (35-001-0019) converted to PM2.5 and relocated to new location (35-001-1012).
- Request PM_{2.5} FRM daily sampling frequency reduced from 1/1 to 1/3 at two sites (35-001-0023 & 0024).
- Two CO monitors (35-001-1014 & 0024) discontinued. One relocated to new location (35-001-1013).

- Two O3 monitors (35-001-1014 & 0019) discontinued. One relocated to new site (special study – no AIRS designation).
- Monitoring at four of the six remaining Ozone sites will be reduced to seasonal (April 1 – October 30). (High site and NCore will continue year-around.)
- One NOx monitor (35-001-0024) discontinued.
- All Nephelometers and Aethelometers are discontinued.

Table 6: Proposed Changes to Albuquerque-Bernalillo Co. Air Monitoring Stations

Station Description				Full Met	Gases			PM10			PM2.5			Other			
AIRs Number	Site Code	Station Name	Station Address		Ozone	CO	NOx	Cont. (TEOM)	FDMS	24 Hour Hi Vol	Cont. (TEOM)	FDMS	Sequential	Speciation	Nephe- lometer	Aethe- lometer	Pollen
35-001-0019	2ZE	Uptown Zuni Park	2421 Mesilla NE	p	API 400A	API 300		R & P 1400	R & P 8500		R & P 1400	R & P 8500					Burkhard
35-001-1012	2ZF	Double Eagle Elementary	8901 Lowel NE	X	API 400A						R & P 1400	R & P 8500					
35-001-1013	2ZH	North Valley	9819 2nd St. NW	X	API 400A	API 300		R & P 1400			R & P 1400	R & P 8500		Optec NGN-2	McGee AE2		
35-001-1014	2ZL	Corrales	10155 Coors NW	X	API 400A	API 300				GMW (2-Col)							
35-001-0023	2ZM	Del Norte	4700 San Mateo NE	X	API 400A	API 300	API 200A			GMW		Partisol 2025 Col. 1/3, 1/6	MetOne Super SASS 1/6	Optec NGN-2	McGee AE2		
35-001-0024	2ZN	SE Heights	6000 Anderson SE	X	API 400A	API 300	API 200A					Partisol 2025 1/3					
35-001-0026	2ZS	Singer	3700 Singer NE	X				R & P 1400		Partisol 2025s (2-Col)							
35-001-0027	2ZT	Taylor Ranch	5100 Montano NW	X	API 400A						R & P 1400	R & P 8500					Burkhard
35-001-0028	2ZU	Uptown San Pedro	San Pedro & AMAFCA NE	p		API 300				GMW							
35-001-0029	2ZV	South Valley	201 Prosperity SE	X	API 400A	API 300		R & P 1400			R & P 1400	R & P 8500		Ecotech	McGee AE2		
[ADD]	2ZW	AQD Westside	11850 Sunset Gardens SW	X	API 400A			R & P 1400									
		NCORE	SLAMS	Other													
			Seasonal														

Table 7 shows the reduced network, if EPA accepts this review

Table 7: Reduced Albuquerque-Bernalillo Co. Air Monitoring Network

Station Description				Full Met	Gases			PM10			PM2.5			Other	
AIRs Number	Site Code	Station Name	Station Address		Ozone	CO	NOx	24 Hour Hi Vol	Cont. (TEOM)	FDMS	Cont. (TEOM)	FDMS	Sequential	Speciation	Pollen
35-001-0019	2ZE	Uptown Zuni Park	2421 Mesilla NE	p		API 300					R & P 1400	R & P 8500			Burkhard
35-001-1012	2ZF	Double Eagle Elementary	8901 Lowel NE	X	API 400A						R & P 1400	R & P 8500			
35-001-1013	2ZH	North Valley	9819 2nd St. NW	X	API 400A	API 300			R & P 1400		R & P 1400	R & P 8500			
35-001-0023	2ZM	Del Norte	4700 San Mateo NE	X	API 400A	API 300	API 200A	GMW	*Thermo 1405 Dichotomous			2025 Col. 1/3, 1/6	MetOne Super SASS 1/6		
35-001-0024	2ZN	SE Heights	6000 Anderson SE	X	API 400A								Partisol 2025 1/3		
35-001-0026	2ZS	Singer	3700 Singer NE	X				Partisol 2025s (2-Col)	R & P 1400a						
35-001-0027	2ZT	Taylor Ranch	5100 Montano NW	X	API 400A						R & P 1400	R & P 8500			
35-001-0028	2ZU	Uptown San Pedro	San Pedro & AMAFCA NE	p		API 300									Burkhard
35-001-0029	2ZV	South Valley	201 Prosperity SE	X	API 400A	API 300			R & P 1400a		R & P 1400	R & P 8500			
	2ZW	AQD Westside	11850 Sunset Gardens SW	X	API 400A				R & P 1400						

NCORE SLAMS
Seasonal
Other

*Note: Dates for delivery and installation of 1405 Dichotomous monitor are uncertain.

Summary

Any comments pertaining to this document should be sent to:

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Or email: klienemann@cabq.gov

Comments will be compiled, posted on the Air Quality website, and sent to EPA with the proposed Network Review.

After completing its review EPA will either approve the document or return comments. EPA's response and the final Network Review document will then be posted on the Air Quality Website.

Draft/Proposed