

Air Quality June Report

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Program and Divisions.....	2
Director's Message For June.....	3
Public Health Message.....	4
Control Strategies Report.....	5
Air Quality Data.....	6
Air Quality Air Permitting Update.....	7
Fire Alerts.....	8
Vehicle Pollution Monitoring Report.....	9
Enforcement Reports.....	10
Community Engagement.....	11



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Program & Divisions

Program Information

City of Albuquerque Environmental Health
Department Director - (505) 768-2712

Ambient Air Monitoring (505) 768-1966

- National Ambient Air Quality Standards
- Compliance & Enforcement - (505) 768-1972
- Facility Inspection
- Fugitive Dust Control Permit Application
- Asbestos Abatement Notification
- Woodburning Exemptions

Permitting & Emission Inventories - (505) 768-1948

- Review of Permit Application for Major and Minor Sources
- Air Dispersion Modeling
- Open Burn Permits
- Issuance of Health Alerts (Smoke and Dust)
- Weather Forecasting for Special Events (i.e . Balloon Fiesta and Senior Olympics)

Control Strategies - (505) 768-2660

- Air Quality Planning
- Air Quality Regulation Development
- State Implementation Plan Development
- Air Quality Control Board Support

Public Health Initiatives—311

- Air Quality Complaints
- Indoor/Outdoor Air Quality

Quality Assurance - (505) 768-1963

- EPA Reporting
- Review & Data Validation
- Air Quality & Seasonal Pollen Trends Analysis

Vehicle Pollution Management - (505) 768-1110

- Vehicle Emissions Testing
- Station Certification
- Inspector Training
- Failed Test Resource Center
- Smoking Vehicles


Albuquerque-Bernalillo County Air Quality Control Board Members & Staff

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Maxine Paul (City) Vice Chair
Judy Calman (County)
Susan Langner (County)
Kitty Richards (County)
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Stephanie Apodaca, Liason

Leadership Contact Information

Albuquerque-Bernalillo County Air Quality Control Board - (505) 768-1915

Director's Message for June



The release of both natural and man-made contaminants into the atmosphere can present numerous hazards to human, animal, and plant health. The degree of impact is dependent on the contaminant and its characteristics, the concentration in the atmosphere and the sensitivity of the receptor or person. The Air Quality Program is tasked with the duty of monitoring the ambient air within the entirety of Bernalillo County on a continuous basis. Several monitors are strategically placed around the County to capture the cumulative mixture of air quality pollutants, which data is then reported to the public and the Environmental Protection Agency (EPA). One of the most pressing questions we get from the public is why the Air Quality Program does not monitor every large industrial business at the fence line. Intuitively it would appear that monitoring the air quality at the point of where the pollutants are released would yield the highest numbers translating to a more protective public health strategy. However, the method of selecting where to monitor is quite dynamic and complex and directly tied to the scientific process of the transport and dispersion of air pollutants.

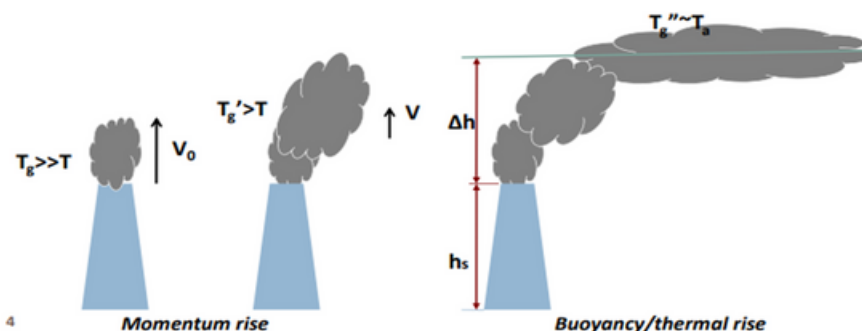
As an example, one common method of pollution release from stationary point sources (industrial sources) are stacks, or more commonly referred to as smokestacks. As the exhaust gases and pollutants leave a stack, they mix with ambient air creating a plume sometimes very visible, depending on its components, but often invisible to the eye. Gases leaving the tops of stacks tend to rise higher than the stack top when they are either of lower density or lighter than the surrounding air (buoyancy rise) or ejected at a velocity high enough to give the exit gases upward kinetic energy (momentum rise). What this means is that the gases leaving the site are highly unlikely to be captured right at the fence line because as the plume travels downwind, the plume diameter grows, and it progressively spreads and disperses into the atmosphere. This however does not mean the Air Quality Program does not consider potential near fence line impacts. Industrial facilities under review for operating conditions going through the Air Quality Program's permitting process must demonstrate through computer modeling that if the very ideal atmospheric and facility conditions exist, receptors (person's or communities) near the fence line are protected at the current federal standards. Fence line monitoring with a mobile monitor can be utilized to verify the modeling as part of compliance reviews.

Public Health Message

The most important goal of monitoring the atmosphere is not to capture one sole source of pollution but to capture as many of the sources of pollution after they all have mixed in the air, which yields the highest potentially measured concentrations. To achieve this there are three key issues that must be considered and understood when it comes to how pollution disperses in the atmosphere.

1. Diffusion due to the concentration gradients.
 - a. This means understanding the physical and chemical properties of the pollutant and thus understanding how it mixes with ambient air.
2. Turbulent velocity fluctuations that disperse pollutants in all directions.
 - a. Turbulence is simply how irregularly the wind behaves.
 - b. There are two different causes of turbulent eddies:
 - i. Convective turbulence results from different heating-cooling of surfaces and air masses. The higher the temperature difference, the greater the turbulence is.
 - ii. Mechanical turbulence is caused by physical obstructions to normal flow such as mountains, building, or trees. The degree of mechanical turbulence depends on wind speed and roughness of the obstructions.
3. General air motion that transports pollutants downwind.
 - a. Anybody that has spent any time in New Mexico and Albuquerque knows air motion in our valley can be classified by many terms other than general. We go through extremely high winds in the spring, evening atmospheric inversions that can stagnate and capture all pollution in one area, along with experience strong downwash effects that can transport pollutants from our neighboring valley communities and even neighboring states.

All these factors work together in our atmosphere causing a breaking apart of atmospheric parcels that mixes polluted air with unpolluted air. By understanding the air dynamics in play along with how pollutants react in the atmosphere, the monitoring system is designed to strategically collect the best cumulative concentration of the surrounding sources of pollution. By understanding the chemical, physical and mechanical properties of pollution dispersion the Air Quality Program ensures that the best representation possible of the pollution conditions in atmosphere is presented to the public. This ensures that public and natural resource health is protected and the best possible policy is implemented to address pressing air quality issues in Albuquerque / Bernalillo County.



Control Strategies Report for May

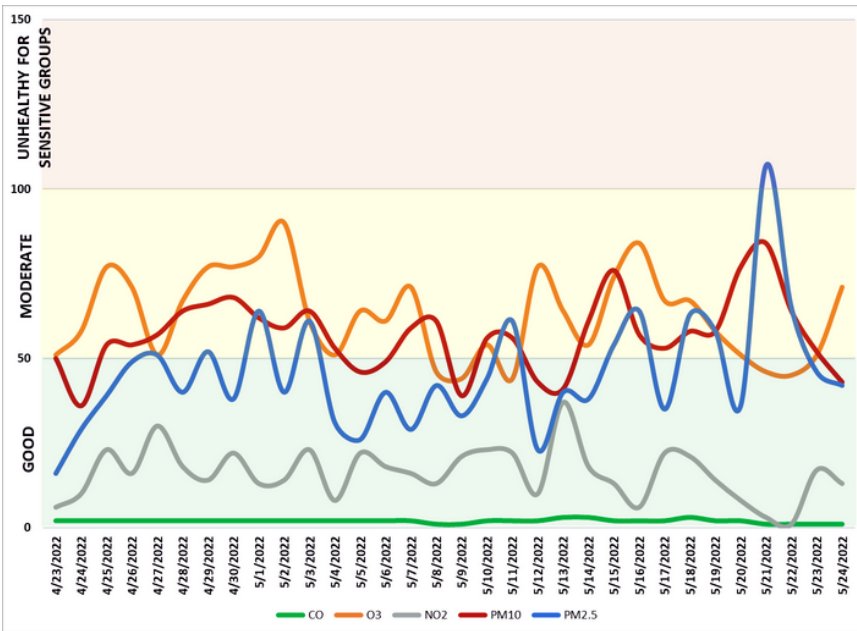
The Environmental Health Department Air Quality Program wrapped up the Clean Cars rulemaking in May with a joint hearing before the Air Board and the New Mexico Environmental Improvement Board at the Albuquerque Convention Center. At the conclusion of the hearing, the Air Board voted unanimously to adopt EHD's proposed replacement rule 20.11.104 NMAC, New Motor Vehicle Emission Standards.

The rule adopts California's Advanced Clean Cars program, a coordinated package of regulations designed to reduce emissions of greenhouse gases, ozone and smog-causing pollutants from new passenger cars, trucks, and SUVs. The Rule includes a combination of increasingly stringent vehicle emission standards and a requirement that manufacturers deliver for sale an increasing number of zero-emission vehicles, such as battery electric and plug-in hybrid vehicles, in New Mexico starting in model year 2026. The Rule will become effective on July 1, 2022.



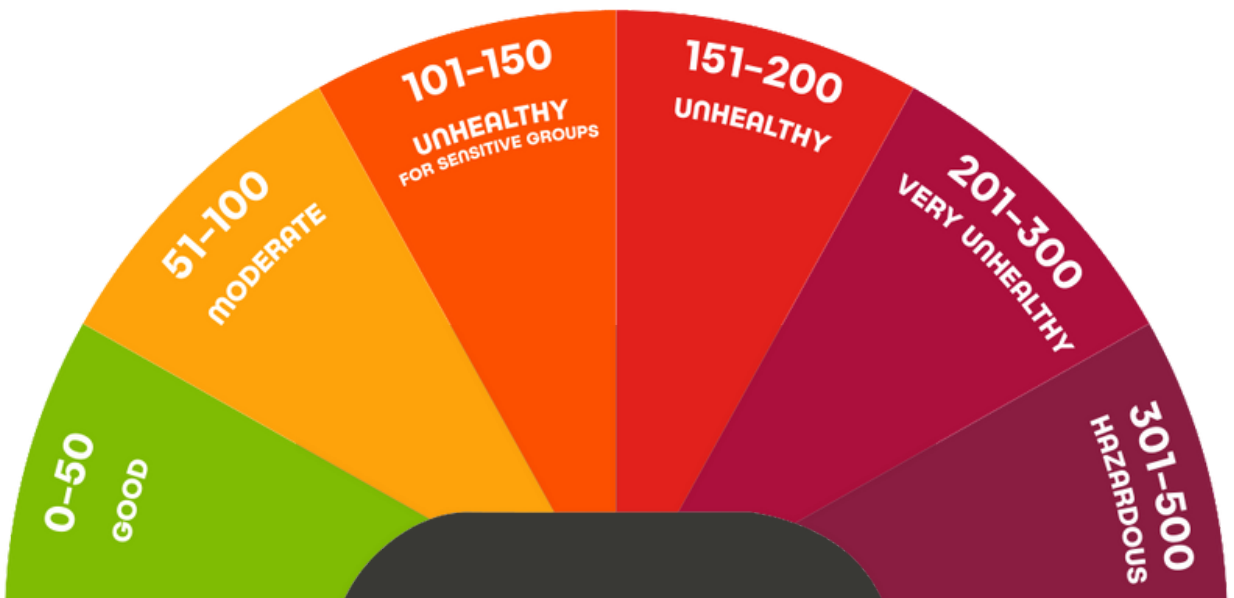
Air Quality Data

The Air Quality Index (AQI) values indicate how clean or polluted ambient air is, and if there are any health concerns associated with a specific value. The AQI in Bernalillo County is measured for four nationally regulated air pollutants: Carbon Monoxide (CO), Ozone (O3), Coarse Particulate (PM10) and Fine Particulate (PM2.5).



Air Quality Index

- Hazardous >300
- Very Unhealthy 201-300
- Unhealthy 151-200
- Unhealthy for Sensitive Groups 101-150
- Moderate 51-100
- Good 0-5



Air Quality Permitting Report



Permit Application Received

Applications received:

- In the month of May 2022, the Permitting Division received an application from the University of New Mexico to renew its Title V permit. The Permitting Division is conducting a preliminary review to determine if the application can be deemed administratively complete.

Update on Applications Still Under Review

Star Paving

The Permitting Division is continuing to review the application.

Black Rock Services

The Permitting Division is continuing to review the application.

Health Alerts Issued

During the month of May, the Air Quality Program issued a total of two (2) smoke health alerts that have been the result of smoke from wildfires in the vicinity and four (4) dust health alerts have been issued as a result of high winds and severe drought.

Fire Alerts

Winds aloft can transport wildfire smoke to Albuquerque from any direction. However, wildfire smoke events have been watched more closely over the last 20 years due to an increased awareness of the dangers of fine particle pollution and ozone pollution. Wildfire smoke is most likely to reach Albuquerque from May through August. During May, June, and early July, prevailing winds come out of the southwest and Albuquerque is most likely to get smoke impacts from fires along and north of the Mogollon Rim, as well as the Gila Wilderness of Arizona and New Mexico. By mid July and August, monsoon rains have extinguished fires across the southwestern U.S., and smoke in Albuquerque is usually from distant wildfires in the Pacific Northwest and California.

The Air Quality Program maintains several monitoring stations around the metro area. Most smoke particles are fine particles, i.e. PM_{2.5}. Fine particle monitors are included at the South Valley, Foothills, Del Norte, and Jefferson Corridor monitoring stations. The level of EPA's 24-hour PM_{2.5} National Ambient Air Quality Standard (NAAQS) is the same as the threshold for the Air Quality Index category of Unhealthy for Sensitive Groups. Although the Air Quality Program uses a lower threshold to issue health alerts for smoke, Figure 1 shows a day when the 24-hour average surpassed the level of the EPA 24-hour PM_{2.5} NAAQS. The heavy smoke on this day was due to smoke from the Mescal and Telegraph wildfires near Phoenix, AZ.

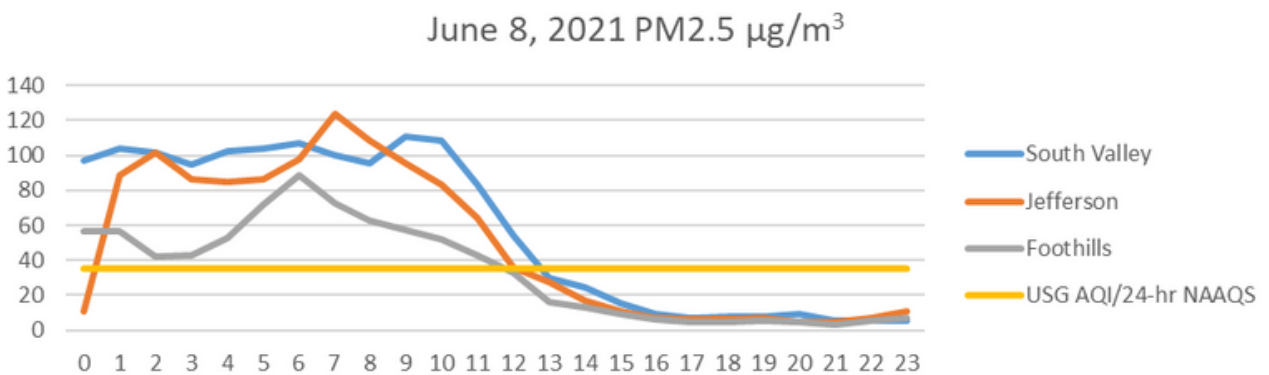


Figure 1: PM_{2.5} levels in Albuquerque on June 8, 2021 due to smoke from Arizona fires

Health alerts are sometimes issued before the smoke arrives in Albuquerque. Such decisions are based on computerized forecast models of smoke movement. These models are run by the National Oceanic and Atmospheric Administration and the U.S. Forest Service. The City of Albuquerque participates in a daily videoconference with the National Weather Service, the U.S. Forest Service, the New Mexico Environment Department, and the New Mexico Department of Health. Current smoke impacts, fire behavior, current weather, and the need for health alerts as well as the appropriate coverage and time period are discussed in these meetings.

Vehicle Pollution Monitoring Report

This month, the Vehicle Pollution Management Division (VPMD) released Version 252 of the New Mexico Emission Inspection System (EIS). The updated version of the vehicle emissions testing software used for conducting vehicle emissions testing was released to provide several improvements:

- Software updates required to align with the On-Board-Device (OBD) considerations of some newer model year 2021 and 2022 vehicles.
- Better efficiency and customer service during an emissions test by eliminating unnecessary prompts for the inspector during an emissions test.
- Additional compliance systems to the software to ensure the test is performed in accordance with requirements.

The software was beta tested at VPMD Headquarters for about a month before being released to the network of Air Care Stations throughout the Albuquerque/Bernalillo County area.

A little over a month ago VPMD Headquarters adjusted its work hours for its failed test resource center to provide additional service hours before 8:00am and after 5:00pm on Tuesdays through Fridays to make our services more convenient to the community. Based on preliminary data of the first three weeks, the additional operating hours have an above average amount of customers coming to our facility for failed test resources. The new hours are: Tuesday through Friday from 7:00 a.m. to 5:30 p.m.



Enforcement Report



Enforcement Program Update:

In the past month, the Air Quality Program has issued 1 Notice of Violation (NOV), settled 3 NOVs and conducted 132 inspections. Additional information regarding what sites were inspected and when, can be found on our website at: [Air Quality Program Inspections](#).

Facility Report Reviews

Per Chair Meiklejohn's request, below is the Enforcement & Compliance Division's (Division) response to the discussion that occurred at the Air Board Meeting held on May 11, 2022 about facility reporting.

The Division receives an assortment of reports from regulated facilities throughout the year. An example of some of the reports the Division receives would be, monthly, quarterly, biannual, annual and compliance test reports. With the exception of compliance test reports, when the Division wants to verify the completeness and accuracy of a report submitted, it can cross check the data against site records and in some cases onsite monitoring devices that record operations. Regarding compliance testing, these are done by 3rd party testers who are hired by the Permittee who certify to their process and results. The Division is also able to observe the compliance test and view pollutant concentrations real-time, which we can compare against submittal of the final test report.

The Division has not had an instance of a facility falsifying records, but we have taken numerous enforcement actions for facilities submitting reports showing violations of permit conditions and for compliance testing showing an exceedance of permit limits.

Community Engagement

How are environmental and public health agencies responding to air pollution to change health outcomes? Through a creative approach to collaborative community engagement. The City of Albuquerque Environmental Health Department is working in partnership with the Health Equity Council (HEC), which received an EPA Environmental Justice small grant for the Neighborhood Food Hub Project in the International District. During the months of June and July, María Gallegos, EHD Community Liaison and Co-Principal Investigator on the project, will be working with the youth-led Citizen Science Air Quality Monitoring portion of the project to provide education about environmental health, justice and policy. Youth will be exploring the following research questions : 1) Do established gardens (>10 yrs old) improve air quality and soil and health and biodiversity in the International District? and 2) Do established gardens reduce the heat island effect in the International District?

The opportunity to work in a community, with the community, gives the Department access to learn directly from folks most impacted and opens an avenue to provide education about the City's Environmental Health programs and processes.

Albuquerque's International District is a diverse, culturally rich and underserved low income community with a population of approximately 29,000 in a 3.9 square mile area. All 5-census tracts comprising the neighborhood are Qualified Census Tracts consisting of 50% of the population who make less than 60% of the median income. According to the Center for Disease Control Vulnerability Index, 4 of the 5 census tracts in the International District have a high vulnerability index of 84-89. Close proximity to Kirtland Air Force Base, high density development and less than 7.3% tree canopy in all 5 census tracts contributes to poor air quality and high heat island index in many parts of the neighborhood.

Wildcat Blooms Garden on the campus of Wilson Middle School is 1 of 6 sites in the International District where U.S. Environmental Protection Agency approved air quality monitors will be installed. The monitors will collect air quality data on ozone, nitrogen dioxide, fine particulate matter, relative humidity and temperature (heat island index). Stay tuned for updates on the project.

