ALBUQUERQUE / BERNALILLO COUNTY
AIR QUALITY CONTROL BOARD
NEWSLETTER

Martin J. Chávez, Mayor

Thaddeus Lucero,
Bernalillo County Manager

The Air Shed

PUBLISHED MONTHLY BY THE AIR QUALITY DIVISION

Air Quality Division News

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AUGUST"S AIR QUALITY INDEX:

GOOD!

FOR ACTUAL AQI VALUES, SEE PAGE 5

August-September, 2004 Volume 5, Number 8

City of Albuquerque
Environmental Health Department
Director - 768-2600

Albuquerque / Bernalillo County Air Quality Control Board
768-2600

Air Quality Division Manager
768-1930

Important Phone Numbers
Air Quality Index & Pollen
768-4731 opt 1 or 766-7664
Burn/No Burn 768-BURN (2876)

Ambient Air Monitoring - 768-1969
- National Ambient Air Quality Standards
- AQI & Seasonal Pollen

Compliance & Field Enforcement - 768-1930
- Facility Inspection
- Topsoil Disturbance
- Compliance Assurance
- Asbestos Abatement
- Open Burn Permits
- Woodburning Exemptions

Education, Outreach & Technical Assistance - 768-1970
- Pollution Prevention
- Emergency Preparedness
- Community Outreach
- Small Business Assistance
- *The Air Shed* Newsletter

Permitting & Emission Inventories - 768-1930
- Application Review & Permit Issuance
- Permitting Policy / Development
- Ambient Air Dispersion Modeling
- Emission and Pollutant Inventories
- Aerometric Information Retrieval System [AIRS]

Control Strategies- 768-2600
- Development of Air Quality Regulations
- Preparation of State Implementation Plan elements
- Air Quality Control Board
- Review Federal environmental assessments

Public Health Initiatives - 767-5621
- Air Quality Complaints
- Indoor Air

Quality Assurance - 768-1963
- EPA Reporting
- Review & Validation of Data

Gas Cap Promotion

Albuquerque and surrounding areas are currently threatened by potential violation of the National Ambient Air Quality Standard for ozone. Ozone (O_3), the principal constituent of photochemical smog, is not typically emitted directly by emissions sources but, rather, is the end product of a complex series of chemical reactions that occur in the atmosphere. The ingredients of that chemical recipe, known as ozone precursors, are oxides of nitrogen (No_x) and volatile organic compounds (VOC).

Oxides of nitrogen are generally associated with combustion and are emitted by both gasoline and diesel engines as well as other high temperature industrial activities. Volatile organic compounds are most commonly associated with fuels, paints and solvents, but can be found in a host of other products as well. The most effective way to mitigate ozone is to reduce the ambient levels of the ozone precursors and prevent its formation.

Given that most members of the public are unaware of the seriousness of the ozone problem in our airshed and know even less about ozone's chemical makeup and origins, Air Quality Division, in partnership with our sister-Division, Vehicle Pollution Management, pooled resources to simultaneously educate the public and abate ozone.

Since significant emissions of VOCs occur due to missing or faulty gas caps on cars and trucks, and since recent revisions to the required vehicle emissions test now include a test of the vehicle's gas cap, it seemed a golden opportunity for a promotion.

With the help of a grant from EPA, vouchers worth $10.00 toward the purchase of a new gas cap were provided to hundreds of vehicle owners whose vehicles failed the gas cap portion of the emissions test. The vouchers were exchanged for a new gas cap at any of over a dozen auto parts suppliers in the vicinity. The promotion not only softened the blow of receiving a failed emissions test but also provided an opportunity to educate the public about the importance of good vehicle maintenance.

Continued on next page

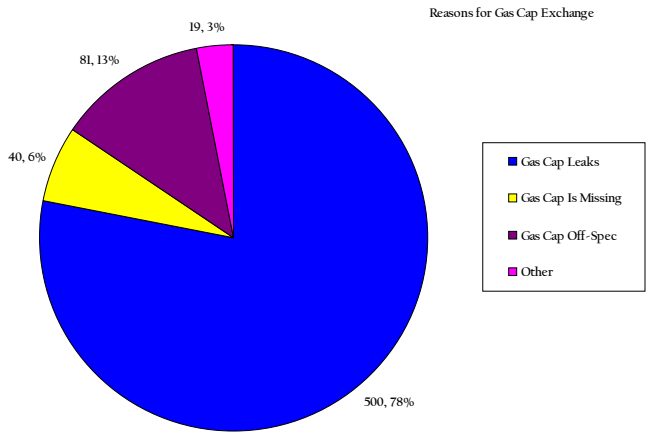
AIR QUALITY CONTROL BOARD REPORT

Summary of Activities
Albuquerque/Bernalillo County
Air Quality Control Board

The Albuquerque/Bernalillo County Air Quality Control Board did not meet during the month of August, 2004. Regular business will be resumed at the next meeting scheduled for September 8, 2004.

Gas Caps, continued from page 2

During the six month implementation period, **641** gas caps were exchanged at a cost of **$5,156.61**; average cost of a gas cap is $8.04. Results of gas caps failure were tracked and the largest percentage failed due to leaks (78%). Gas caps that were failed because they were found to be off-specification, missing or for other reasons followed at smaller percentages.



Not only will those customers who received new gas caps as part of the program now get better gas mileage, but the community will benefit from cleaner air. The VOCs captured by those new gas caps will equal almost half of the amount of VOC emitted by one of the fuel distribution centers on south Broadway Blvd. And we all now know a little more about ozone. Not bad!

Albuquerque / Bernalillo County
Air Quality Control Board

Board Members & Staff

Stephen Pilon, City
Karen Wentworth, County
Johnnye Lewis - County
Sue Umshler - County (Chair)
Betty Chang - City (Vice Chair)
Donald Naranjo - City
Vacant - City

Alfredo Santistevan, Director
Environmental Health Department

Isreal L. Tavarez
Air Quality Division Manager/
Secretary to the Board

Adelia Kearny
Assistant City Attorney

Glen Dennis
Vehicle Pollution Management Division Manager

Jens Deichman
Environmental Planning Commission Liaison

Monthly Board Meetings

Board meetings are usually held the second Wednesday of each month at 5:15 p.m. in the Council/Commission Chambers, lower level, Albuquerque/ Bernalillo County Government Center, 1 Civic Plaza, 400 Marquette Avenue NW Albuquerque, NM.

Agendas, which will show the correct date and meeting place, are generally available three days before the meeting and can be obtained by contacting Mr. Neal Butt at 505-768-2660 or via e-mail at: nbutt@cabq.gov.

Notice to persons with disabilities: If you have a disability and require special assistance to participate in any Board meeting please call the Air Quality Division at 505-768-2600 (Voice) or 505-768-2482 (TTY)

Vehicle Pollution Management Program Report

Vehicle Inspection and Maintenance Program:

Two new Air Care Stations opened in August bringing the total number of certified stations with BAR97 analyzers to one hundred and fifteen (115). The new stations are Cowboy Corral Kia, a new and used car dealership located at 9640 Eagle Ranch Rd NW near Cottonwood Mall and Albuquerque Kwik Lube located in the far northeast heights at the intersection of Tramway Blvd. and Paseo del Norte.

As part of the program change to the BAR97/OBDII/gas cap test VPMD is providing new "Certified Air Care Station" signs to all existing and new stations. The official station sign has been redesigned to more visibly display the test fee and testing hours. The Air Care Station diamond has been retained but the red clouds have been removed to make more room for information useful to the customer. Air Care Stations are required to display the official sign. VPMD field auditors are issuing new signs and collecting the old steel and aluminum signs for recycling.

Air Care Inspector Training Program:

VPMD offered two sessions of the Air Care Inspector Certification course in August due to a recent increase in demand for training on the new BAR97 analyzers. Normally, one class per month is sufficient to meet the demand. Twenty four of the twenty seven students passed both the written and practical exams and became certified inspectors.

Gas Cap Testing Program:

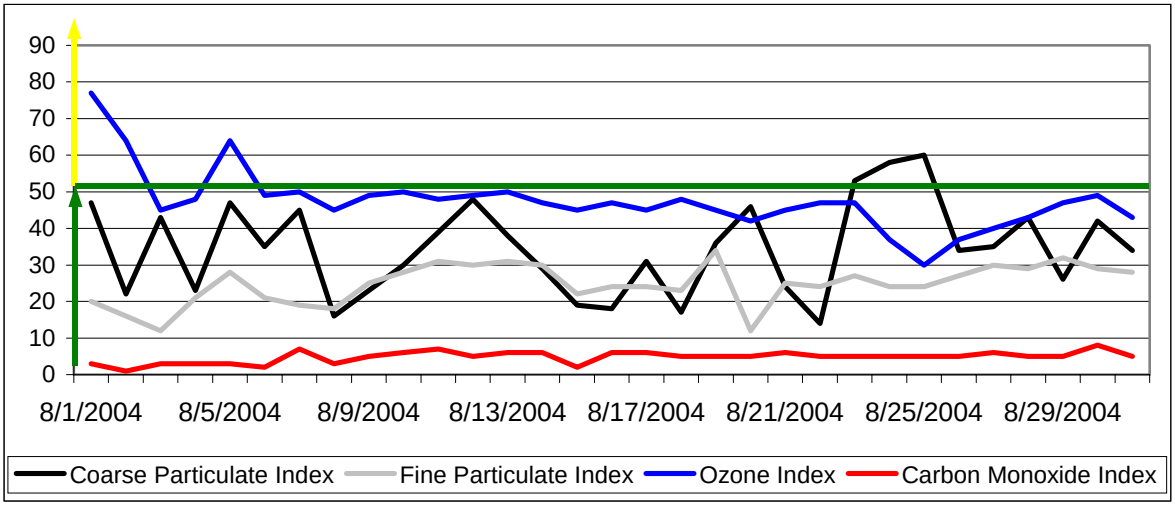
All 1600 of the $10 gas cap vouchers provided for in the EPA grant obtained by the Air Quality Division have been issued by VPMD and the Air Care Stations. Once mandatory testing of gas caps took full effect on July 1st the vouchers went fast. The gas cap failure rate is averaging just under 5% as anticipated. This is very similar to the initial failure rates testing programs have experienced around the country. After the initial round of tests (2 years) the failure rate normally falls to around 2% and we would expect a similar decline here as well. VPMD and AQD are exploring means of extending the voucher program which is somewhat cumbersome to administer but is very popular with both the test stations and the public.

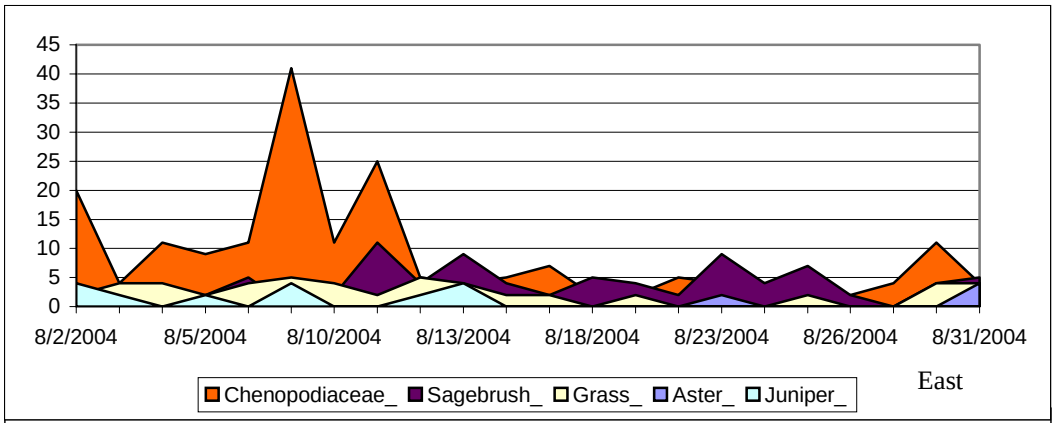
AIR QUALITY DATA FOR AUGUST, 2004

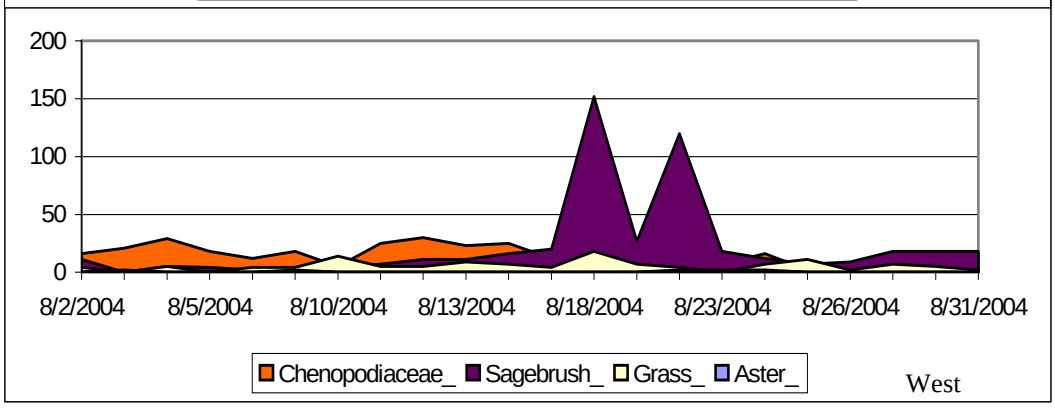
The Air Quality Index [AQI] values indicate how clean or polluted ambient air is, and if there are any health concerns associated with a specific value. The AQI in Bernalillo County is measured for four [4] nationally regulated air pollutants: Carbon Monoxide [CO], Ozone [O_3], Coarse Particulate [PM10] and Fine Particulate [PM2.5].

As shown by the graph below, AQI values were "Good" to "Moderate" in August, which means that air pollutants at this level pose little or no health risks to our community, but those members of our community who already have respiratory problems may be slightly affected. Thus, as the values increase into a higher category, health risks will similarly increase. As you may have guessed, the last category, "Hazardous", with AQI values greater than 300, is very serious and can be detrimental to the health of the whole community even if emergency health warnings are triggered. Call the Air Quality Information Line at 766-7664 or 768-4731 Option 1 to get today's AQI Values.

AIR QUALITY INDEX
Hazardous > 300
Very Unhealthy 201 - 300
Unhealthy 151 - 200
Unhealthy for Sensitive Groups 101 - 150
Moderate 51 - 100
Good 0 - 50

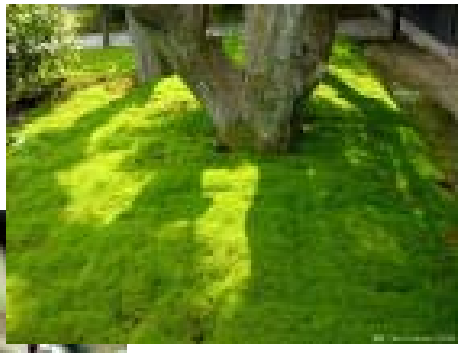






Pollen data is reported Monday - Friday, during the months of March - October. It is reported as grains of pollen per cubic meter of air sampled. Air Quality Monitoring staff collect data from areas east and west of the Rio Grande within the greater Albuquerque metropolitan area. Pollen data from a previous 24-hour sampling period is then published in local newspapers in the weather section, broadcast with local news station weather reports, or can be obtained by calling the **Air Quality Information Line** 766-7664

Lichens and Mosses
Serve as Air Pollution Monitors



Moss

Some of Nature's most primitive organisms often serve as some of our most sensitive environmental monitors. The presence of lichens and mosses, in particular, are an indicator of clean air. Their absence in a habitat often signals trouble.

Lichen

Lichens, the scaly growth often found on rocks and tree trunks and limbs (like in the photo on the right) are wonderful examples of symbiosis, a harmonious partnership between different organisms. Lichens, from the Greek word for "tree moss", are not mosses at all, but rather are threads of fungus woven together with microscopic green alga to form a single body called a thallus which bears no resemblance to either of its constituent parts. Algae within the thalllus manufacture sugars that support the fungus and the fungus, in turn, provides protection for the sensitive algae. Neither part can survive without the other. Lichens don't have roots, so must receive their nutrients directly from rainfall.

Lichens can survive, even flourish, in harsh terrestrial habitats like deserts and arctic climes. It is estimated that lichens are the dominant vegetation on 8% of the earth's terrestrial surface. Lichens do not harm trees or shrubs. Although the lichens are attached to the bark or penetrate a short distance, they do not enter the inner bark where food is transported, and hence do not rob the tree of nourishment. Neither do lichens cause disease. Lichens are often even considered pioneer species since they are often the first species to colonize newly-exposed rock or soil. But lichens are very sensitive to air pollution. Lichens absorb and retain rainwater and everything that comes with it directly, much like a sponge. Lacking a mechanism to purge pollution, contaminants can then pile up within the lichen's tissues. Lichens are especially sensitive to sulfur dioxide (SO_2), a pollutant closely linked to coal-fired power generators. The sulfur absorbed by the lichen accumulates within its tissues until it breaks down the chlorophyll molecules necessary to support photosynthesis. Once photosynthesis ceases, the alga component of the lichen dies. The death of the alga subsequently brings about the death of its fungal partner.

Mosses belong to a group of green plants called bryophytes (from the Greek words bryon, "moss" and phyton, "plant"). Bryophytes do not produce flowers, seeds, or fruits. Bryophytes reproduce through spreading spores and can also regenerate from broken-off bits of leaves and stems. Bryophytes have structures that resemble roots, leaves and stems but lack true water and food-conducting tissues. Bryophytes favor cool, moist environments like stream banks, swamps and woodlands. Mosses can also survive in harsh habitats like deserts and arctic environments.

Mosses assimilate water and nutrients through their very tiny leaves. The leaves of mosses lack the waxy covering called a "cuticle", common to higher plants, that acts as a protective layer against pollution. The absence of this protective layer enables the plant to quickly absorb water and nutrients whenever they become available, but also makes the plant vulnerable to various types of air pollution.

Mosses affect the communities in which they live as they supply food and shelter for small animals and insects. They protect soil and keep slopes from washing away during rainstorms or severe weather. They also aid in forming new soil. Acid produced by the root-like parts of the moss slowly soften the rock when they grow in shade over rocks. This acid breaks down into the soil. The dead moss parts will turn into humus and then larger plants will have sufficient soil to grow.

Modern monitoring equipment can provide a very sophisticated analysis of air chemistry but only measures what's in the air at any given moment. And no monitor can measure pollution's effect on living tissue. Mosses and lichens in particular vary in sensitivity to air pollution and, therefore, through the geologic record, can provide historical evidence of air pollution in any given environment over time. And since different species are sensitive to different levels and types of pollutants, a careful inventory of mosses and lichens can provide a very detailed survey of a given environment's pollution history.

Some environments are so contaminated that mosses and lichens simply won't grow. These areas are known as either "moss deserts" or "lichen deserts", depending on the situation. As testimony to the success of air quality control programs, once an area's air quality returns to healthful status, mosses and lichens will slowly re-appear.

Something Fishy?

Fish and shellfish are, and should continue to be, an important part of our diet. Fish and shellfish contain high-quality protein, are low in saturated fat and contain omega-3 fatty acids, all important nutrients. A well-balanced diet that includes a variety of fish and shellfish can lead to good heart health in adults and ensure children's proper growth and development. But, studies have shown that some fish contain levels of mercury that could be dangerous for some groups.

Mercury is a naturally occurring element that is present throughout the environment. Human activity can release some of that mercury into the air, water and soil. In the U.S., coal-fired power plants are the biggest source of mercury emissions to the air.

When liquid mercury is spilled, it forms droplets that can accumulate in the tiniest of spaces and then emit vapors into the air. Health problems caused by mercury depend on how much has entered your body, how it entered your body, how long you have been exposed to it, and how your body responds to the mercury. All mercury spills, regardless of quantity, should be treated seriously.

Mercury concentrations in air are usually low and of little direct concern. But when mercury enters water, biological processes transform it to a highly toxic form that builds up in fish and animals that eat fish. People are exposed to mercury primarily by eating fish.

The Food and Drug Administration (FDA) and the Environmental Protection Agency (EPA) are advising women who may become pregnant, pregnant women, nursing mothers, and young children to avoid some types of fish and eat fish and shellfish that are lower in mercury.

By following these recommendations for selecting and eating fish or shellfish, women and young children will receive the benefits of eating fish and shellfish and be confident that they have reduced their exposure to the harmful effects of mercury.

Do not eat Shark, Swordfish, King Mackerel, or Tilefish because they contain high levels of mercury.

Eat up to 12 ounces (2 average meals) a week of a variety of fish and shellfish that are lower in mercury.

- Five of the most commonly eaten fish that are low in mercury are shrimp, canned light tuna, salmon, pollock, and catfish.
- Another commonly eaten fish, albacore ("white") tuna has more mercury than canned light tuna. So, when choosing your two meals of fish and shellfish, you should only67 eat up to 6 ounces (one average meal) of albacore tuna per week.

For specific information about what types of New Mexico fish are best, point your browser to http://www.nmenvm.us/swqb/Mercury.html. Co-sponsored by the New Mexico Department of Health, the New Mexico Environment Department and the New Mexico Department of Game and Fish, the site offers detailed information about which species of fish have shown the highest levels of mercury and which New Mexico waters are lowest in mercury contamination.

New Mexico offers many exciting opportunities to take your family fishing and to enjoy the great outdoors this summer. Just take a moment to educate yourself and your family about the risks associated with mercury contamination and "Fish safe!".