



Santa Barbara County
Air Pollution Control District

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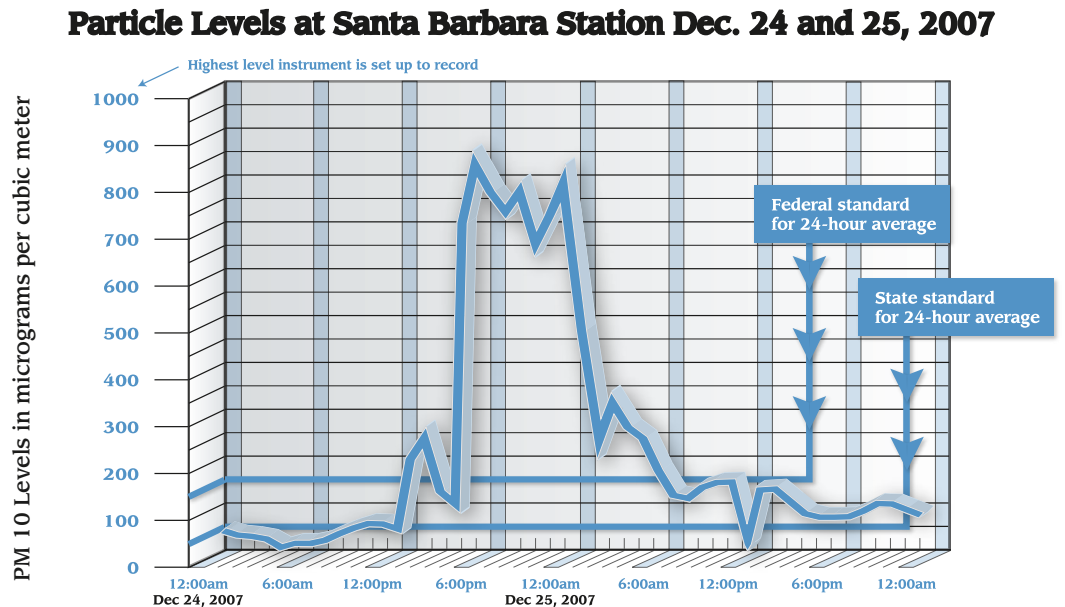
On the Air

High Winds and Poor Air Quality

On December 24th, high winds blew soot and dust into the air in Southern Santa Barbara County, and APCD's Santa Barbara monitoring station recorded levels of particles so high they were close to the limits the monitoring equipment is set up to record (see graph). Hourly concentrations of particles peaked at close to 900 micrograms per cubic meter; stations in Santa Barbara County rarely record hourly peaks higher than 100 micrograms per cubic meter under normal conditions.

Tom Murphy, Manager of APCD's Technology and Environmental Assessment Division, noted that the December wind pattern was similar to one that produced poor air quality in the area in late October, and remarked: "These wind events produced the highest particle readings we've ever seen in Santa Barbara County—highest by an order of magnitude."

In late October, strong winds stirred up particles of soot and ash left on the ground and on leaves of trees and vegetation by the Zaca Fire, the second largest fire in California history. The Zaca Fire burned more than 240,000 acres, mostly in wilderness and national forest areas in Santa Barbara County. Over time, larger ash particles were broken up into smaller particles, and by December, the winds were also stirring up dust from the combination of dry weather conditions, and the presence of large areas of open land where the vegetation that would normally hold the soil had been burned.



Readings of particulate matter (PM) taken at the downtown Santa Barbara monitoring station during a 48-hour period starting at 12:01 AM on December 24, 2007, show that levels of PM10 (particles less than 10 micrometers in diameter) reached almost 900 micrograms per cubic meter (1000 is the highest the equipment is set up to measure). The federal standard for PM10 is a 24-hour average of 150 micrograms per cubic meter.

During fall and winter, Santa Ana winds are common in Southern California. These offshore winds develop when high pressure builds in the Great Basin area of Utah and Nevada, usually following the passage of a fast-moving cold front. The clockwise movement of air around the high pressure system produces warm, dry winds that are generally from the east to northeast direction. The strength and duration of Santa Ana winds depends on the difference in pressure between the Great Basin and the coast, the strength of winds aloft and the temperature of the air mass. Typically, wind speeds during Santa Ana conditions are in excess of 25 miles per hour, but sustained winds of up to 60 miles per hour are not uncommon. Local terrain features shield Santa

Barbara County from the easterly winds that develop during Santa Ana events, so wind speeds in this area are not as strong as they are farther south.

On the days preceding Santa Ana events, however, strong northerly winds can develop in Santa Barbara County. During the ash events of October and December, the northerly winds in Santa Barbara County were unusually strong due to several meteorological factors, including large differences in pressure between the coast and inland areas.

Said Murphy: "While we experience this climatological pattern each year, two things were different this year. One, the local winds prior to the Santa Ana events and the Santa

Ana winds that followed were exceptionally strong. Plus, this year, we had a new and large source of emissions from the Zaca Fire."

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Creating a Healthy Community

The way we're designing and building communities in the U.S. is making us sick.

This was the message Dr. Richard Jackson brought to a January forum sponsored by the Coalition for Community Wellness, a consortium of public health organizations and agencies. The forum was part of Plan Santa Barbara, the effort to determine how the city will grow and develop over the next twenty years.

Jackson, a former director of the Center for Disease Control and Prevention's National Center for Environmental Health, noted, "One hundred years ago if you looked to see what people were sick with, you saw all the infectious diseases. And people absolutely understood then that your health was linked to where you lived, and that you could

improve your health by changing that."

He continued, "I'm going to argue that the lessons of changing people's environments to improve their health still apply today." Public health experts need to consider the factors behind the causes of death, he said, remarking that obesity, diabetes, heart disease and other diseases of the twenty-first century are closely related to the way communities have developed. Pointing to high rates of childhood obesity, he detailed statistics that show that many fewer children are walking or biking to school. Urban sprawl has produced long commutes, he said, and people are living in places that are not easily navigated on foot, or by bike or bus, so they are missing out on "incidental exercise," the exercise

that happens naturally when people are walking to the bus stop, or doing an errand by bike or on foot.

Other speakers at the forum provided a local picture that reflected the national trends. Anne Patterson, Director of Nutrition Programs at the Santa Barbara County Public Health Department referred to obesity rates in Santa Barbara County of 28 percent for children, 36 percent for teens, and a whopping 54 percent for adults. She noted that Santa Barbara County has three times as many fast food restaurants and convenience stores as supermarkets and produce stores. Planners should understand the importance for a healthy community of access to nutritional food sources, she said, noting that studies show that people who live near supermarkets or grocery stores have lower rates of obesity.

Speaking at the forum, APCD Director Terry Dressler echoed the importance of careful planning, but struck a cautionary note: "Land use planning is moving toward increasing density, and there's a desire to do mixed-use developments. But you do have to be careful about what you mix." He added, "Many of the gains we've made in air quality have been due to technology—cleaner cars and trucks and cleaner fuels. But technology can only take us so far. We have to start building our communities in such a way that we don't rely so much on the automobile, so we can continue the gains we've made in cleaning the air."

For more information on planning for healthy communities, see this page on APCD's website: www.sbcapcd.org/apcd/growth.htm. For information on Safe Routes to School programs, see this page: www.sbcapcd.org/saferoutes.htm.

Poor Air Quality (cont'd)

He added, "While we had some days with poor air quality from smoke during the Zaca Fire, the worst air quality actually occurred many weeks after the fire was out, as a result of these high wind events." Working with the County Public Health Department, APCD issued several smoke, ash, and dust advisories, warning county residents to stay indoors when the air was bad, and to avoid outdoor exercise.

Once the winds died down, particle levels went back down to more typical lower levels, although monitoring stations did show that levels of smaller particles went up slightly at certain times of day, particularly weekday commute times. "It appears that vehicles on the roads were breaking down the size of the particles, and stirring them

back up into the air, leading to higher than normal concentrations during the morning and afternoon hours," said Murphy.

The fire season in Santa Barbara County started in 2007 on May 14 - several weeks earlier than the 2006 start of June 7. Studies of climate change impacts on California have predicted longer and more intense fire seasons and dry weather conditions as two possible impacts. Murphy commented, "We can't say how things will go next year or in the years after. But the events of this past fall were a wake-up call to us and the community that we may need to be prepared for some new issues with our air quality."

For more information, see our website at www.OurAir.org.

Smoke, Ash, and Dust Events

During the event, when the air is bad:

- *Avoid outdoor exercise.*
- *Stay indoors, and keep indoor air clean. Keep your windows and doors closed – unless it's extremely hot outside. If you have an air conditioner, run it with the fresh air intake closed and the filter clean. Don't use fireplaces, gas logs, or candles; don't vacuum, and don't smoke.*
- *When smoke is heavy for a prolonged period of time, fine particles can build up indoors even though you may not be able to see them. If you have heart or lung disease, are an older adult, or have children, talk with your doctor about whether and when you should leave the area.*
- *Be sure to call your doctor if your symptoms worsen.*

After the event, when you're cleaning up ash and dust:

- *Use a wet broom and small amount of water to sweep soot and ash aside or into a dustpan for disposal. Or use a vacuum cleaner that has a HEPA filter. Use a damp cloth to clean surfaces. Don't use leaf blowers, or vacuum cleaners that don't have filters.*
- *Go to a car wash to get your car cleaned. Don't hose down your car or outside areas using large amounts of water. This wastes water, and sends ash and dust particles into runoff systems and our creeks.*

Two Engineers Join APCD

APCD Board Roundup

Following are the highlights of the December and January Board meetings.

December

- 🔊 In closed session, directed the Air Pollution Control Officer and APCD Counsel to sue EPA for failure to adopt standards regulating air pollution from Category 3 marine vessels.
- 🔊 Renewed employee benefit insurance plans.
- 🔊 Authorized APCD Board Chair to sign letter urging Chair of the state Air Resources Board to ask local air districts for assistance implementing the Global Warming Solutions Act.

January

- 🔊 In closed session, directed the Air Pollution Control Officer and APCD Counsel to file 2nd lawsuit over EPA's failure to adopt standards regulating air pollution from large ships.
- 🔊 Executed letter to state Attorney General (AG) requesting the AG join the APCD and other air districts in suing the EPA over ship rules.
- 🔊 Presented Resolution of Appreciation to Jim Richardson for service on the APCD Board.
- 🔊 Held a public hearing and adopted new Rule 361, Small Boilers, Steam Generators, and Process Heaters, and amended Rule 202 (Exemptions to Rule 201 – Permits Required).

In January, APCD welcomed two new engineers to the Engineering and Compliance Division.

Lia Bregante comes to the agency from her work for an aerospace company in Long Beach, where she analyzed damaged commercial aircraft, including one airplane that was hit by lightning while in flight. She reviewed the documentation of damage, assessed the loads and stresses on the equipment, and helped determine whether the repair plan proposed by the airline company would be sufficient to fix the problem.

Bregante, who is from Santa Barbara originally, has a B.S. in Mechanical Engineering from the University of California at Santa Barbara; the position here offered her the opportunity to return home.

She was also drawn to APCD's mission. She remarked, "The work we do here is so important. I especially feel that after living in Long Beach. I used to walk on the roof of a parking structure at lunchtime, and there was always this brown cloud in the air. You knew what you were breathing was not healthy. I like to jog, and it's hard to do that when you're not able to get a clean breath." She will be working on



Lia Bregante and Ben Ellenberger

permitting of diesel engines, including emergency standby generators and farm engines, and will also do boiler permitting. "I'm interested in how engines work, and I like looking at the chemistry side of it, the different fuels and pollutants," she said.

Ben Ellenberger comes to the agency after three years as an air quality engineer at the San Joaquin Valley Air Pollution Control District's Bakersfield office. The San Joaquin district is much larger than APCD, and Ellenberger was attracted to the idea of working at a smaller agency. "I like getting the chance to work on a greater variety of projects, and to stay with projects over time," he said.

He added, "One thing I enjoy the most is talking to operators at

facilities about how their different processes work." Ellenberger will be working on permitting of large air pollution sources that have federal permits in addition to APCD permits, including oil and gas facilities, and landfills.

Ellenberger's father worked in the oil and gas industry; the family lived in Indonesia, and then later moved to Bakersfield, and Ellenberger remembers visiting oil fields with his father there.

Ellenberger has a B.S. in aerospace engineering from Georgia Tech. When he first started at the San Joaquin air district he liked the idea of helping people by working for clean air, but wasn't sure what it would be like to work for a regulatory agency. He remarked, "I wondered if it

might be difficult or antagonistic. But I found that once you calmly explain to people why you're doing what you're doing, you can develop a good working relationship."

Communicating about Santa Barbara's Ocean, Air, and Land

A free forum Tuesday March 18th, 7-9 pm
Faulkner Gallery, Santa Barbara Public Library, 40 E. Anapamu St.

University of California at Santa Barbara (UCSB) students will present projects developed with and for local environmental agencies, including communications projects for APCD that address attitudes about car-free transportation, awareness of smoke and dust events, and use of new media to communicate about air quality subjects.

Other projects include student films on issues facing coastal and marine habitats along the UCSB shoreline, and research and recommendations on communication with businesses and schools to increase recycling efforts. Film-makers, project writers, and project coordinators will encourage audience comments and questions.

The event is presented by: the UCSB Carsey-Wolf Center for Film, Television, and New Media; the UCSB Environmental Research Focus Group of the Interdisciplinary Humanities Center; the UCSB Departments of Communication and Film & Media Studies; the Shoreline Preservation/Coastal Fund; APCD; and the Santa Barbara Environmental Services Division.

See www.cfnm.ucsb.edu for more information.

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APCD Board Calendar

All meetings start at 1:30 p.m.
For final meeting agendas, call the
APCD Board Clerk, 961-8853.

March 20

Board of Supervisors'
Hearing Room
511 East Lakeside Parkway
Santa Maria, CA 93455

May 15

Board of Supervisors'
Hearing Room
511 East Lakeside Parkway
Santa Maria, CA 93455

June 19

Board of Supervisors'
Hearing Room
105 East Anapamu Street
Santa Barbara, California 93101

Community Advisory Council

The APCD Community Advisory Council meets monthly at the Days Motor Inn in Buellton. The public is welcome. For more information, call Linda Beard, 961-8853.

April 20, 2008

Do **YOUR**
Part on **EARTH DAY**
Ride **FREE...** on **MTD**

Popular Transit Promotion Returns for Earth Day

This year once again all MTD buses and shuttles will be FREE on the date of the South Coast Earth Day Festival celebration, which this year is Sunday, April 20. Last year, the first year for the promotion, there were 1,714 more bus and shuttle trips on Earth Day, a 15 percent increase over 2006, which was especially impressive given rainy conditions in 2007.

The South Coast Earth Day Festival, presented by the Community Environmental Council (CEC), will be at the Santa Barbara County Courthouse Sunken Gardens, from 10:00 am to 5:30 pm. The Ride Free on MTD initiative is supported by CEC, APCD, the Santa Barbara Car Free project, the Santa Barbara Metropolitan Transit District (MTD), and the City of Santa Barbara. MTD buses and shuttles will be free all day on that day—for travel anywhere in town, not just for transportation to and from the festival.

Cars are a major source of smog pollution and greenhouses gases contributing to global climate change. One of the biggest steps anyone can take to reduce his or her personal contribution to air pollution is to drive less, and to carpool, walk, bike, or take the bus or train, more.

For more information on the Ride Free initiative, see www.SantaBarbaraCarFree.org; to find out about local Earth Day celebrations in other parts of the county, check with your local city, or visit this page on our website: www.sbcapcd.org/apcd/earthday.htm.

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On the Air

is a quarterly newsletter written by Mary Byrd, published by the Community Programs Section of the Santa Barbara County Air Pollution Control District.

For further information on items in this newsletter, or to be added to our subscription list, please call Bobbie Bratz, 961-8890 or Email bratzb@sbcapcd.org.



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Cleaning Up School Bus Exhaust

If you've ever driven behind a school bus with an older diesel engine, you've seen the black soot coming out of the exhaust pipe, and wondered how much is going into your lungs. Studies show these engines are not only polluting the outside air—the diesel exhaust is getting into the air students are breathing inside the bus too.

Diesel particulate is considered the number one airborne carcinogen in the state. California has made cleaning up school bus engines a priority, and has established a funding program. Over the past few years, APCD has been helping county school districts purchase new, cleaner, school buses and pollution-control devices for existing buses with the help of state funds.

Recently five school buses at the Orcutt Union School District were fitted with controls known as particulate traps, because they



Orcutt School District Head Mechanic Garwin Weiting, with one of the school buses recently outfitted with a particulate trap, which will cut 85 percent of the diesel particulate emissions from the exhaust. Weiting is demonstrating a side panel where the driver can see if it's time to clean the trap. If so, it is replaced with a clean one kept on hand, and the dirty one is sent to a facility in Los Angeles, which cleans it and returns it.

trap the diesel soot and prevent it from going into the air. The traps reduce emissions of particulate from the buses by 85 percent. Garwin Weiting, Head Mechanic for the Orcutt District, noted the fitting process was relatively simple; a crew arrived with mufflers and brackets specially

designed for the bus models and did the installation. Once the California Highway Patrol verified that no changes were made to the bus bodies, and APCD inspected, the buses were ready to roll.

Of twenty-two Orcutt school buses, two are propane-powered

(these replaced 1971 and 1984 diesel school buses), and six buses are model year 1999 and newer. As additional state funding becomes available, Weiting would like to replace older school buses in his fleet, especially two that are model year 1985, with newer, cleaner models. He reports that the fuel cost is very close for the propane versus diesel fuel; costs wind up comparable when the propane buses are compared with the older diesel buses. Since the newer diesel buses are more fuel efficient, they do slightly better in fuel cost than the propane buses. Weiting is a fan of the propane buses, however, and would like more: "They are so much cleaner, almost zero emissions coming out of the tailpipe."

In the past few years, APCD has funded the replacement of eight school buses in the county with cleaner buses, at the Guadalupe, Orcutt, Blochman, Cuyama

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APCD Sues over EPA's Failure to Regulate Large Ships

In January, APCD announced that it is suing the U.S. Environmental Protection Agency in the U.S. Court of Appeals over EPA's failure to issue rules to control pollution from large ship engines. The suit challenges the rule adopted by EPA in December in which EPA gave itself another extension, this time for two more years, to December 31, 2009 to regulate these engines.

APCD previously filed a "deadline" lawsuit against EPA on December

24, 2007 in district court in Washington D.C., over EPA's failure to adopt substantive air pollution control standards by the deadline of April 27, 2007. The deadline lawsuit was filed in D.C. to coordinate with lawsuits previously filed by Friends of the Earth and the South Coast Air Quality Management District. The second suit is being filed as a safeguard to counter EPA's contention that the district court loses jurisdiction over this issue now that EPA has adopted a

rule, even though the rule's only purpose is to extend the deadline.

Large ships are one of the last uncontrolled and unregulated major sources of air pollution. Their massive two-stroke engines produce as much power as a small power plant and burn residual fuel oil, a particularly dirty fuel. Air Pollution Control Officer Terry Dressler remarks, "Every time we do an inventory of air pollution in this county, we see emissions from ships

growing even as other sources are reducing their pollution. This can't continue. EPA must regulate this huge source of pollution to ensure that we can sustain our clean-air progress."

For more information, including a copy of the brief filed in U.S. District Court on February 22, 2008, plus copies of the District's letters to EPA, and District Board Actions in this area since 2001, see "Marine Shipping" on APCD's website www.OurAir.org.

Business Focus

Rules Roundup

In January, the APCD Board adopted a new rule, Rule 361, which sets emission limits for small-sized boilers, steam generators, and process heaters. The rule is designed to reduce nitrogen oxides (NOx) and carbon monoxide (CO) emissions from this equipment, and includes a sunset clause that gives owners and operators until January 1, 2020 to modify or replace their existing units with units that comply with the rule. Any modification or replacement of an existing unit

will trigger compliance with the rule requirement before January 1, 2020.

APCD's 2001, 2004, and 2007 Clean Air Plans identified the need for this rule, since APCD had rules for both smaller and larger units of this type, but no rule for the mid-sized units. APCD held public workshops on the proposed rule in August. In January, the APCD Board also adopted a revision to existing Rule 202, which covers permit exemptions.

With this revision, combustion units rated greater than two million British thermal units per hour are required to be permitted; owners and operators of existing units have until April 16, 2008 to submit permit applications to the APCD to avoid penalties.

In February, APCD held a public workshop on proposed revisions to rules on the permitting and control of stationary internal combustion engines, including Rule 333 (engines), and Rule 202 (permit exemptions). The proposed revisions to the rules may apply to equipment used in: oil and gas exploration, production, processing and marketing; mineral processing; construction; and any other activity using an engine rated 50 brake horsepower or greater to provide primary power. Emergency standby engines and agricultural engines' registration requirements will not be affected by the proposed rule revisions.

The APCD first required permits for piston-type internal combustion engines in 1988. Rule 333 was first adopted by the APCD Board in 1991, and, except for a minor change to a rule reference in 1997, the rule has not been changed since. In 1995, the U.S. Environmental Protection Agency suggested changes to permit exemptions for engines, and in 1997, APCD made changes to some permit requirements, but did not address the EPA suggestions for modification of Rule 333 at that time.

The proposed revisions to Rules 333 and 202 address deficiencies that EPA identified, and also incorporate suggestions from the California Air Resources Board, industry, and APCD staff. The revised Rule 333 would require certain types of engines to use a "reasonably available control technology" to control emissions of NOx, CO, and reactive organic compounds (ROCs).

The APCD is currently addressing comments made by the regulated community during the workshop. The tentative schedule is for the APCD Community Advisory Council to consider and make a recommendation to the Board in April; the rule adoption Board Hearing may be scheduled for June or August.

The APCD is also proposing to revise Rule 339, Motor Vehicle and Mobile Equipment Coating Operations, by adopting the California Suggested Control Measure for this equipment category. Rule 339, originally

adopted in 1991, controls emissions of ROCs from automotive painting facilities. Staff anticipates adoption of the state Measure with the addition of existing rule exemptions and a new surface preparation exemption, to address concerns from the regulated industry. Public workshops were held on proposed revisions in September last year; the tentative schedule is for the APCD Community Advisory Council to consider and make a recommendation to the Board in March, and the rule adoption Board Hearing may be scheduled for May.

For more information on APCD's rules, visit this page: <http://www.sbcpd.org/rules/rules.htm>



APCD Grants for Local Businesses

Funds for Cleaner Engines

Equipment that may be eligible for grants to repower or retrofit includes:

On-Road and Off-Road Vehicles/ Equipment, Agricultural Water Pumps, School Buses, Marine Engines, and Other.

For applications & more info visit: www.sbcpd.org/itg/itg.htm.

Contact Information:

Ron Tan at 961-8812 or itg@sbcpd.org.

School Bus Exhaust (cont'd)

and Goleta school districts. An additional twenty-one buses operated by the Orcutt District, Cuyama Unified School District, Goleta Union School District, Carpinteria Unified School District and Student Transportation of America have been fitted with particulate traps. Taken together, the school bus projects have cut more than 24 tons of nitrogen oxides and particulate matter from diesel school bus exhaust since 2001.

Additional funding for cleaner buses and pollution controls is available to county school districts.

For more information, see "Funds for Cleaner Engines" on our website at www.OurAir.org, or contact Jim Fredrickson at fredricksonj@sbcpd.org, or 961-8892.