



South Coast AQMD Efforts to Reduce Wood Smoke Emissions

(April 2008)

Background

People that live and work in the South Coast Air Basin breathe unhealthful amounts of fine particulate matter, also referred to as PM_{2.5} which stands for “particulate matter less than 2.5 microns in diameter.” These particles are so small that the body’s natural defense mechanisms can’t keep them from entering deep into the lungs where they can harm us by reducing lung function, making bronchitis and other lung conditions worse, and triggering asthma and heart attacks. The State and federal government set health-based air quality standards, which this area does not yet meet. Although not the largest source, wood smoke from fireplaces and wood stoves contributes to the poor air quality in our area.

Answers to frequently asked questions on PM_{2.5} health effects and AQMD Rule 445 – Wood Burning Devices, are found below. You may also want to review the [detailed information](#) that has been prepared to answer to frequently asked questions for local government building officials, home builders, architects, installers or other interested parties.

Health Effects from Wood Smoke

Wood smoke consists of very small particles, generally less than 2.5 microns in diameter (1/30th the diameter of a human hair) that can evade the body’s natural defense mechanisms. A study by the California Air Resources Board (CARB) estimated that the elevated ambient 1999-2000 PM_{2.5} levels from all sources here in the South Coast Air Basin result in 5,400 premature deaths, 140,000 asthma/lower respiratory symptoms and 980,000 lost work days per year. For more information on the health effects from air pollution, refer to [Appendix I of the 2007 Air Quality Management Plan \(AQMP\)](#).

Wood smoke contains a mixture of gases and fine particles that can cause burning eyes, runny nose, and bronchitis. Even limited exposure to smoke can be harmful to human health, particularly to the health of children, the elderly, and those with chronic health conditions. Beside fine particulates, wood smoke also contains carbon monoxide and toxic compounds, such as polycyclic aromatic hydrocarbons



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also known as PAHs. You may also want to visit the following web sites if you are interested in learning more about health effects from wood smoke:

<http://www.epa.gov/woodstoves/healtheffects.html>

http://www.ehhi.org/woodsmoke/health_effects.shtml

<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1026893>

Frequently Asked Questions about AQMD Rule 445 – Wood Burning Devices

1. What action is the District taking to address wood smoke emissions?

The AQMD Governing Board adopted [Rule 445 – Wood Burning Devices on March 7, 2008](#) and has also initiated an incentive program to encourage the public to switch to gaseous-fueled hearth products.

2. What does Rule 445 require?

The main elements of the rule are:

- standards for new construction and existing structures;
- no burning of items such as trash in a wood burning device;
- requirements for commercial bulk wood sellers relative to selling unseasoned wood during certain months; and
- a mandatory curtailment element that will be implemented during high pollution days beginning in 2011 during winter months, if any.

The following is a link to the [Rule 445 Fact Sheet](#).

3. What does the incentive program offer?

The AQMD Governing Board has approved the release of a request for proposals to hire one or more contractors to implement a program that would offer the public financial incentives to switch to gaseous-fueled hearth products. Under the



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program, the gaseous-fueled hearth product (i.e., log set, fireplace insert, or stove) would have to be professionally installed in order to receive the financial incentive. Details are still being explored, however, it is anticipated that the financial incentive will be in the \$100 to \$150 range per residence.

For more information you can view the [Program Announcement](#):

4. What portions of Southern California are subject to Rule 445?

Rule 445 applies to the South Coast Air Basin portion of the South Coast Air Quality Management District. As shown in the map below, this area is generally defined as all of Orange County and the non-desert portion of Los Angeles, Riverside and San Bernardino Counties. Rule 445 is not applicable in the Coachella Valley. The standards for new construction and the mandatory wood burning curtailment program that will be implemented in 2011 are not applicable to properties 3,000 and more feet in elevation.



You can also view a more detailed [map](#).



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5. What types of hearth products (fireplaces, inserts or stoves) can be built under AQMD Rule 445?

It is important to note that Rule 445 establishes separate standards for new and existing developments. New developments are subject to tighter restrictions while existing developments would have a wider range of options for remodels or room additions. The standards for new developments go into effect on March 9, 2009 and the standards for existing developments become effective September 8, 2008. The following information outlines the standards for new and existing developments.

New Developments (Effective March 9, 2009)

- ✓ Permanently installed indoor and outdoor wood burning devices not allowed in new developments.
- ✓ Open hearth fireplaces with gas logs or other design features that preclude wood burning are allowed.

Exemptions

- ✓ A wood burning device can be installed in new developments above 3,000 feet in elevation or where there is no natural gas infrastructure within 150 feet of the property line **if** it is a cleaner device as allowed for installation in existing developments under Rule 445.

Existing Developments (Effective September 8, 2008)

- ✓ Permanently installed indoor and outdoor wood burning devices can only be installed in existing homes and businesses if it is one of these cleaner burning options:

- U.S. EPA Phase II-certified fireplace insert/stove or equivalent device;
- Pellet-fueled fireplace insert or stove;
- Masonry heater (not an open hearth fireplace); or
- dedicated gaseous-fueled fireplace

Exemptions

- ✓ Existing properties that are officially registered as a historic site are not subject to this restriction.

Local government building officials, home builders, architects, chimney installers or other interested parties may also want to review the [detailed information](#) prepared for them on Rule 445.



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6. How is the sale of firewood in Southern California covered by the Rule?

There are no restrictions on the sale of seasoned firewood (less than 20 percent moisture content) at any time during the year. AQMD Rule 445 does, however, specify that commercial firewood facilities may not sell green firewood (greater than 20 percent moisture content) from July through February. This restriction is only for commercial firewood facilities that have a business license and does not apply to private parties that trim or remove trees and give away or sell small amounts of firewood. Properly seasoned wood is darker, has cracks in the end grain, and sounds hollow when smacked against another piece of wood.

7. Is wood burning going to be banned during the entire winter in Southern California?

No. AQMD Rule 445 includes a mandatory wood burning curtailment program that could be implemented in 2011 during periods of poor air quality in specific areas. A mandatory wood burning curtailment would be issued for specific areas where PM_{2.5} levels are forecast to exceed the standard (35 $\mu\text{g}/\text{m}^3$). The mandatory curtailment program would only be effective during November through the end of February and would be for specific areas. During a mandatory curtailment day, the public will be required to refrain from both indoor and outdoor solid fuel burning in specific areas. Based on historical data, 10 to 25 mandatory curtailment days could be expected in specific areas, however, due to anticipated improvements in air quality, it is expected that there would be fewer curtailment days in the future.



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8. How can I find out if there is a mandatory wood burning curtailment day in my neighborhood?

As mentioned, the earliest time that a mandatory wood burning curtailment day could be implemented in any portion of the South Coast Air Basin is November of 2011. If air quality conditions have not improved sufficiently and a mandatory curtailment program is required, the public will be notified through one or more of the following methods:

- AQMD web site,
- toll free phone number;
- list serve e-mail message, or
- other media outlets.

Additional information will be developed in the future.

9. How can I learn more about air quality conditions?

You can also check [current air quality conditions](#) in your neighborhood or by calling 1 (800) CUT-SMOG.

10. How can I reduce emissions from my fireplace to help improve air quality in my neighborhood?

Smoke from neighborhood fireplaces and wood stoves, a common source of both odor and reduced visibility, contributes to the air pollution problems people complain about most. When you include the health-related problems caused by inhaling smoke pollutants, health costs for individuals and the community can be significant. Cleaner alternatives to wood burning include gaseous-fueled or electric devices. If you do decide to burn firewood, follow these simple principles to limit the amount of smoke produced.



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✘ Never:

- burn garbage, plastic, colored paper, treated wood, or wet wood

🌍 Always:

- ✓ use seasoned, dry wood that has been split properly. Properly seasoned wood is darker, has cracks in the end grain, and sounds hollow when hit against another piece of wood.
- ✓ Store wood outdoors, off the ground with the top covered.
- ✓ Burn hot, bright fires.
- ✓ Use smaller fires in mild weather.

Additional tips to reduce wood smoke emissions can be obtained from the U.S. EPA or CARB web sites at:

<http://www.epa.gov/woodstoves/efficiently.html>

http://www.arb.ca.gov/cap/handbooks/wood_burning_handbook.pdf