

**Note to Public: At its May 3, 2013 meeting, the SCAQMD Governing Board is considering all parts of Proposed Amended Rules 445 and 444, except specific provisions related to beach fire rings. Beach fire rings will be considered at the June 7<sup>th</sup> Board meeting.**

BOARD MEETING DATE: May 3, 2013

AGENDA NO. 29

PROPOSAL: Amend Rule 445 – Wood-Burning Devices and Amend Rule 444 – Open Burning

SYNOPSIS: The 2012 Air Quality Management Plan (AQMP) was adopted by the SCAQMD Board in December 2012 and was subsequently approved by CARB in January 2013. AQMP modeling has indicated the benefits of episodic fine particle emission reductions for attaining the federal 24-hour PM<sub>2.5</sub> standard by 2014. The proposed rule amendments are intended to implement 2012 AQMP control measures BCM-01 [Further Reductions from Residential Wood-Burning Devices] and BCM-02 [Further Reductions from Open Burning]. Proposed Amended Rule (PAR) 445 – Wood Burning Devices will lower the threshold for a wintertime wood burning curtailment, establish criteria for a basin-wide curtailment, and set standards for solid-fuel labeling for wood and wood-based products by commercial firewood sellers. Additionally, PAR 444 – Open Burning will incorporate the winter season burn restriction consistent with PAR 445. Other minor amendments to both rules are proposed to improve rule implementation clarity relative to existing requirements. Lastly, a prohibition of opening burning in beach areas will be considered at the June 7 Board Meeting.

COMMITTEE: Stationary Source, March 15, 2013, Reviewed

RECOMMENDED ACTIONS:

Adopt the attached resolution:

1. Adopting Proposed Amended Rule 445 – Wood Burning Devices; and

2. Adopting Proposed Amended Rule 444 – Open Burning, with the exception of amendments related to beach fire rings, which will be considered at the June 7<sup>th</sup> Governing Board meeting. These provisions include paragraphs (b)(11) and (c)(7), subparagraph (d)(3)(G), and paragraphs (h)(5) and (6).

Barry R. Wallerstein, D.Env.  
Executive Officer

EC:LT:PF:TG:ML

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### **Background**

Residents of the South Coast Air Basin are exposed to some of the highest ambient concentrations of fine particulate matter (PM<sub>2.5</sub>) in the nation. Although smoke from biomass burning (firewood and open burning) is not the largest source of the region's fine particulate pollution, it is one of the last largely uncontrolled source of particulates, and air quality modeling indicates that significant air quality improvements can be achieved by reducing these emissions on an episodic basis (AQMD, 2012). Studies also continue to show the importance of reducing public exposure to PM, including biomass smoke (U.S. EPA, 2009). This is reflected in the U.S. EPA's recent decision to lower the PM<sub>2.5</sub> annual standard from 15 to 12 µg/m<sup>3</sup> to be more health protective (c.f. 78 FR 3,086-3,287, National Ambient Air Quality Standards for Particulate Matter, dated January 15, 2013<sup>1</sup>). In addition, SCAQMD staff has recently learned of concerns regarding adverse health effects associated with open burning at beaches and proposes consideration of a prohibition on burning of wood and other biomass fuels at beaches effective January 1, 2015. Local governments would be allowed to invoke this prohibition earlier through formal action.

### **Air Quality Management Plan and Legal Mandates**

The 2012 Air Quality Management Plan (AQMP) focused on measures to attain the federal 24-hour PM<sub>2.5</sub> standard of 35 µg/m<sup>3</sup> and thus included control measures intended to further reduce PM emissions from residential wood combustion (BCM-01) and open burning sources (BCM-02).<sup>2</sup> These control measures were developed based on modeling efforts showing significant improvements in air quality associated with episodic control of biomass burning sources. The proposed amendments to Rule 445 (Wood-Burning Devices) and Rule 444 (Open Burning) are intended to implement these 2012 AQMP control measures to aid in achievement of the 24-hour PM<sub>2.5</sub> standard and to protect public health by reducing exposure to potentially high concentrations of wood smoke.

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<sup>1</sup> <http://www.gpo.gov/fdsys/pkg/FR-2013-01-15/pdf/2012-30946.pdf>

<sup>2</sup> Control Measure #2012 BCM-01, <http://www.aqmd.gov/aqmp/2012aqmp/DraftFinal/appIV-A.pdf> - page IV-A-17

## **Public Process**

Three Working Groups (Residential Wood Burning, Agricultural, and Wildland Burning) comprised of representatives of industry, agencies, environmental organizations and interested persons, were convened beginning in November of 2012 to discuss Proposed Amended Rules (PAR) 445 and 444. Subsequent Working Group meetings have been held to discuss ongoing issues. A Public Workshop was held in mid-February 2013 at which time draft rules and a preliminary draft staff report were released. A Public Consultation meeting was also held on March 28, 2013 to present the latest versions of PAR 445 and 444, including a possible prohibition of open burning on beaches.

## **Summary of Proposal**

### PAR 445 – Wood-Burning Devices

The proposed amendments to SCAQMD Rule 445 would lower the PM<sub>2.5</sub> forecast threshold used to declare a mandatory winter burning curtailment from 35 µg/m<sup>3</sup> (current federal PM<sub>2.5</sub> 24-hour standard) to 30 µg/m<sup>3</sup> and would establish a mechanism where curtailments may apply to the entire Basin if a PM<sub>2.5</sub> level of greater than 30 µg/m<sup>3</sup> is forecast for any monitoring station that has recorded violations of the federal 24-hour PM<sub>2.5</sub> standard in either of the previous two three-year design value periods. PAR 445 also requires commercial facilities that sell firewood or other wood-based fuels to notify the public of the SCAQMD's Check Before You Burn program through a labeling program. Sell through provisions have been added to the labeling program to minimize costs to industry.

### PAR 444 – Open Burning

For consistency and to maximize the episodic air quality benefits, Rule 444 burning curtailments are proposed to be aligned with the PAR 445 requirements during the winter season. Accordingly, PAR 444 includes revisions to marginal and permissive burn day definitions that would limit open burning whenever a mandatory winter burning curtailment was called for individual source/receptor areas or the entire Basin under PAR 445. PAR 444 also includes a proposal for Board consideration to prohibit open burning in beach areas beginning January 1, 2015 (to be considered at the June 7, 2013 public hearing). Under PAR 444 a city or county could, through formal action, voluntarily make the prohibition effective sooner than January 1, 2015. No revisions are proposed to the existing requirements for open burning sources above 3,000 feet in elevation or those outside the Basin.

## **Emissions Inventory, Reductions and Cost-Effectiveness**

Emissions from residential wood burning devices result primarily from incomplete combustion and include PM, CO, NO<sub>x</sub>, SO<sub>x</sub>, and VOC, although particulate emissions have been the focus of air district wood and biomass smoke reduction programs. Additionally, incomplete combustion of wood produces polycyclic organic matter, a group of compounds classified as hazardous air pollutants under Title III of the federal

Clean Air Act. The 2008 PM2.5 emissions inventory for residential wood combustion and open burning has been estimated at approximately 9.4 tons per winter day and 4.6 annual average day, respectively. As many as 857 Basin beach fire rings are estimated to emit up to 0.16 to 0.25 ton per day of PM2.5 at full utilization.

SCAQMD staff has estimated that the changes to the mandatory burning curtailment program could potentially reduce Basin ambient PM2.5 emissions on episodic no-burn days by about 7.1 tons per winter day (presuming 75% rule effectiveness). Aligning the Rule 444 open burning restrictions with Rule 445 could potentially reduce Basin PM2.5 emissions on episodic no-burn days by about 4.6 tons per winter day; however, since the burning would likely be shifted to other days, the total annual emissions would remain the same. Accordingly, no annual emissions reductions are anticipated under PAR 444 for traditional open burning sources (agriculture/prescribed burns), but emissions reductions would be expected to be achieved on individual days where high PM2.5 levels are forecast, thus reducing public health impacts. The emissions from as many as 857 Basin beach fire rings would be reduced or eliminated under this proposal. It should be noted that while controlling emissions from residential and biomass burning is primarily intended to reduce PM2.5 emissions, there is an added benefit of also reducing emissions of CO, VOC, NOx, SOx, hazardous air pollutants.

### **Key Issues**

There are five key issues that have emerged during development of PARs 445 and 444. SCAQMD staff's responses are included in the Attachment D to this Board letter and in the draft final staff report. Some industry representatives have requested that the PAR 445 Mandatory Winter Burning Curtailments apply to a smaller subsection of the Basin's households, perhaps at the County level. Other PAR 445 commentators have requested an amendment to allow a wider range of hearth products in certain areas, that pellet grills not be subject to the curtailment provisions, and a commercial wood-based fuel seller has commented on certain elements of the labeling program. The current version of PAR 444 includes consideration of a prohibition of open burning in beach areas that has resulted in comments both for and against prohibition. Several cities have expressed strong opposition and requested that such a decision be left to the cities to decide for their communities.

### **California Environmental Quality Act (CEQA)**

SCAQMD staff has reviewed the proposed project and determined that the PARs 444 and 445 are exempt from CEQA pursuant to CEQA Guidelines §15308 – Actions by Regulatory Agencies for the Protection of the Environment. The proposed project would reduce air pollution and toxic risk, and not generate significant adverse environmental impacts. A Notice of Exemption will be prepared pursuant to CEQA Guidelines §15063 – Notice of Exemption, and filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties immediately following the adoption of the proposed project.

## **Socioeconomic Assessment**

The proposed amendments would affect commercial firewood sellers and the general public who use wood burning fireplaces and other wood burning devices (including fire rings in beach areas). Commercial firewood sellers belong to the industry of fuel dealers. There are about 86 commercial firewood sellers in the Basin, out of which 31 are located in Los Angeles County, 24 in Orange County, 16 in Riverside County, and the remaining 15 in San Bernardino County.

The cost impacts of Basin-wide curtailment on firewood sellers are expected to be minimal because the number of no-burn days is expected to be very small. The majority of packaged firewood sellers are expected to comply with the labeling requirement of the proposed amendments without significant costs. Bulk firewood sellers are expected to incur a minimal cost of preparing a one-page outreach flyer with the SCAQMD's Check Before You Burn statement. Cost impacts to the general public are also expected to be minimal as wood burning in the SCAQMD is done mainly for aesthetic purposes and there are cost-effective alternatives to burning wood for heating.

Any prohibition of beach burning may result in loss of revenues to the cities and entities which charge beach parking fees. State parks and local businesses could also lose revenues due to reductions in the number of visitors. Beach cities and local municipalities would lose sales tax revenues associated with the beach fire activities.

## **Implementation and Resources**

Existing SCAQMD resources are sufficient to conduct compliance activities and refine the PM2.5 forecasting program. SCAQMD staff resources will be used to continue media outreach and work with stakeholders on education and outreach programs; however, additional funds may be requested to enhance public outreach.

## **Attachments**

- A. Summary of the Proposal
- B. Rule Development Process
- C. Key Contacts List
- D. Key Issues and Staff Responses
- E. Resolution
- F. PAR 445 – Wood-Burning Devices
- G. PAR 444 - Open Burning
- H. Final Draft Staff Report
- I. CEQA Notice of Exemption

## ATTACHMENT A SUMMARY OF PROPOSAL

### Proposed Amended Rule 445 – Wood Burning Devices and Rule 444 – Open Burning

The key elements of Proposed Amended Rule 445 are summarized as follows:

- Clarifies rule applicability to wood-based fuels and wood-fired cooking devices.
- Requires commercial wood-based fuel sellers to label products for sale to inform the public of the *Check Before You Burn* program.
  - Two year sell through provisions added
- Lowers the threshold used for the mandatory winter burning curtailment program from 35 to 30  $\mu\text{g}/\text{m}^3$ .
- Establishes a mechanism whereby the mandatory winter burning curtailment program would apply Basin-wide if a no burn day is forecast for a source receptor area that exceeds the 24-hour PM<sub>2.5</sub> standard.

The key elements of Proposed Amended Rule 444 are summarized below:

- Adds a definition for product testing and clarifies product testing exemption.
- Establishes a winter season burn restriction consistent with SCAQMD Rule 445.
  - Not applicable to mountain or desert areas
- Prohibits open burning in beach areas beginning January 1, 2015. A city or county could, through formal action, make the prohibition effective sooner than January 1, 2015

## ATTACHMENT B

### RULE DEVELOPMENT PROCESS

2012 Air Quality Management Plan (AQMP), which was approved by the SCAQMD Board December 2012 and submitted into the SIP January 2013, included control measure [BCM 01 – Further Reductions from Wood Burning] and BCM-02 [Further Reductions from Open Burning] to reduce PM emissions from biomass burning.

**Working Group, Public Workshop, Public Consultation Meeting and Board Committee/Advisory Group Meetings**

#### **Approximately 1,900 Notices Mailed for Public Workshop/Consultation Meetings**

Public Workshop held on February 13, 2013

Working Group meetings held: Rule 444 – Wildland/Prescribed Burns (November 30, 2012 and February 7, 2013), Rule 444 – Agricultural Burning (January 30, 2013) and Rule 445 – Residential Wood Combustion (January 24 and March 6, 2013)

Stationary Source Committee meeting held on March 15, 2013

Public Consultation Meeting held on March 28, 2013

Local Government, Small Business Asst. Advisory Group on April 12, 2013

#### CEQA

The proposed project was determined to reduce air pollution and toxic air contaminant health risk and wouldn't have a significant adverse effect on the environment, so it is exempt from CEQA pursuant to state CEQA Guidelines §15308 – Actions by Regulatory Agencies for the Protection of the Environment.

#### Socioeconomic

Draft analysis released April 3, 2013.

Set Public Hearing: April 5, 2013

Public Hearing: May 3, 2013(except beach burning)

Public Hearing: June 7, 2013(beach burning only)

**Approximately 8 months spent in rule development.**

**ATTACHMENT C**  
**KEY CONTACTS LIST**  
**(April 26, 2013)**

**Governmental Agencies**

U.S. Environmental Protection Agency  
U.S. Forest Service  
California Air Resources Board  
California Coastal Commission  
California State Parks – Orange County District  
State, county and local fire agencies  
State, county and local governments  
County Farm Bureau  
County Agricultural Commissioners  
City of Huntington Beach  
City of Newport Beach

**Regulated Industries/Others**

Building Industry of Southern California (BIA/SC)  
California Association of Realtors  
Duraflame  
Hearth, Patio, and Barbeque Association (HPBA)  
REALTORS Committee on Air Quality  
The Gas Company



**ATTACHMENT D  
KEY ISSUES AND SCAQMD STAFF RESPONSES**

<b>PROPOSED RULE 445</b>	
<b>Issue</b>	<b>Response</b>
<p>A Basin-wide curtailment program may be very difficult to enforce and may confuse the public if the intent is to reduce emissions at peak, inland Basin monitoring sites.</p>	<p>The Basin-wide winter burning curtailment provisions are an important component of the adopted 2012 AQMP residential wood-burning control measure because modeling showed that 60 percent of the concentration captured at the peak PM2.5 monitoring site (Mira Loma) originates from outside the adjoining source receptor areas. The Basin-wide curtailment is needed for both attainment demonstration and contingency measure requirement as committed to in the 2012 AQMP.</p>
<p>The hearth product industry has worked closely with the U.S. EPA to develop Phase 2 Qualified fireplaces and retrofit devices. The SCAQMD should recognize these accomplishments and Rule 445 text should specifically state that U.S. EPA Phase 2 Qualified retrofit kits can be installed into homes with existing wood-burning fireplaces. Rule 445 should be amended to allow U.S. EPA Phase 2 Qualified fireplaces to be installed in new or existing developments in certain areas such as mountain communities above 3,000 feet elevations.</p>	<p>SCAQMD staff has developed additional guidance documents to clarify that U.S. EPA Phase 2 Qualified fireplace retrofit devices can be installed into homes constructed before March 9, 2009. (See Appendix B of draft final staff report).</p> <p>The request to allow the installation of U.S. EPA <u>Phase 2 Qualified</u> fireplaces into new and existing developments above an elevation of 3,000 feet is more complicated as the current Rule 445 provisions only allow U.S. EPA <u>Phase II-Certified</u> wood heaters (i.e., stoves and inserts) for new development in these areas. These two types of devices are inherently different and are subject to difference emissions measurement methodologies. Because of the fundamental differences between the two types of devices and the potential increase in emissions associated with allowing U.S. EPA Phase 2 Qualified devices to be installed in new and existing mountain community developments SCAQMD staff does not recommend inclusion of the requested Rule amendment.</p> <p>In addition, were emission rates to be compared, staff does not believe the Phase 2 Qualified devices to be equivalent to Phase-II certified devices.</p>

**ATTACHMENT D  
KEY ISSUES AND SCAQMD STAFF RESPONSES (cont.)**

<b>PROPOSED RULE 445</b>	
<b>Issue</b>	<b>Response</b>
<p>Mandatory Winter Burning Curtailment provisions should not apply to wood-fired cooking devices. A pellet-fueled cooking appliance is presumed to have an emissions rate that is similar to charcoal grills which are not subject to curtailment provisions. It is recommended that efforts to control emissions during a Mandatory Winter Burning Curtailment should focus on the device or appliance used rather than the fuel.</p>	<p>Staff is unaware of any evidence to show wood pellets are as low emitting as charcoal. Furthermore, Rule 445 provisions are currently based on appliance type and this has resulted in confusion as appliances are periodically changing. SCAQMD staff believes that specifying applicability based on fuel type provides a clear public message as to the days when certain products are not to be used (i.e., No-Burn Day – Do Not Burn Wood).</p> <p>Establishing curtailment applicability based on fuel type also clarifies the rule intent by not allowing a person burning wood during a mandatory winter burning curtailment to claim that the fire was intended for cooking purposes.</p>
<p>The labeling provisions will create additional expenses for industry and there is no evidence of increased rule compliance resulting from product labeling.</p>	<p>SCAQMD staff believes that public education and outreach is a vital component to inform the public of the Check Before You Burn program. To that end, the PAR 445 labeling provisions are intended to inform a targeted audience, wood-based fuel consumers. Sell through provisions have been added to PAR 445 that would allow the sale of existing packaged material with labels for up to two years. It should be noted that the labeling requirements are intentionally similar to that of existing Bay Area AQMD requirements to lessen the potential impacts to industry.</p>

**ATTACHMENT D  
KEY ISSUES AND SCAQMD STAFF RESPONSES (cont.)**

<b>PROPOSED RULE 444</b>	
<b>Issue</b>	<b>Response</b>
<p>The PAR 444 provision to prohibit open burning at beach areas has generated significant comments on either side of the issue. Some have expressed support for the proposal due to odor and health effects from wood smoke. Others have stated that the proposal is unneeded as emissions from beach burning are very minor. Several cities have voiced strong opposition and believe the rule is unnecessary. A number of parties have urged a policy that allows cities to decide for themselves whether beach fires should be allowed. Local governments and businesses in communities with beach fire rings are anticipating a loss of revenue from a reduction in beach fees and product sales.</p>	<p>PAR 444 beach burning provisions would protect the public health of beach goers and the surrounding community by reducing the exposure to wood smoke. These provisions would not apply to the use of charcoal, gaseous, or liquid fuels. A demonstration project is under consideration to identify a low emission open burning alternative that would allow continued use of beach fire rings beyond the January 1, 2015 wood burning prohibition.</p>

**ATTACHMENT E**

**RESOLUTION NO.**

**A Resolution of the Governing Board of the South Coast Air Quality Management District (SCAQMD) certifying the Notice of Exemption for Proposed Amended Rule 445 – Wood-Burning Devices and Proposed Amended Rule 444 – Open Burning.**

**A Resolution of the SCAQMD Governing Board adopting Proposed Amended Rule 445 – Wood-Burning Devices and Proposed Amended Rule 444 – Open Burning.**

**WHEREAS**, the SCAQMD Governing Board has determined with certainty that Proposed Amended Rule 445 – Wood-Burning Devices and Proposed Amended Rule 444 – Open Burning, is a “project” pursuant to the California Environmental Quality Act (CEQA); however, South Coast Air Quality Management District staff reviewed the proposed project and because the proposed project in question would reduce air pollution and toxic air contaminant health risk, and would not have a significant adverse effect on the environment, it was determined that the proposed project is exempt from CEQA pursuant to CEQA Guidelines §15308 – Actions by Regulatory Agencies for the Protection of the Environment; and

**WHEREAS**, the SCAQMD has had its regulatory program certified pursuant to Public Resources Code section 21080.5 and has conducted CEQA review pursuant to such program (AQMD Rule 110); and

**WHEREAS**, SCAQMD staff has prepared a Notice of Exemption (NOE) for Rules 445 and 444, as proposed to be amended, that is completed in compliance with CEQA Guidelines §15002 (k)(1) - Three Step Process and §15061(b)(3) – Review for Exemption (General Rule Exemption); and

**WHEREAS**, a Mitigation Monitoring Plan pursuant to Public Resources Code Section 21081.6, has not been prepared since no significant impact and no feasible mitigation measures are necessary; and

**WHEREAS**, the SCAQMD Governing Board voting on Proposed Amended Rule 445 – Wood-Burning Devices and Proposed Amended Rule 444 – Open Burning, has reviewed and considered the NOE; and

**WHEREAS**, the SCAQMD Governing Board has determined that the Socioeconomic Impact Assessment for Proposed Amended Rule 445 – Wood-Burning Devices and Proposed Amended Rule 444 – Open Burning is consistent with the March 17, 1989 and October 14, 1994 Board Socioeconomic Resolution for rule adoption; and

**WHEREAS**, the SCAQMD Governing Board has determined that the Socioeconomic Impact Assessment is consistent with the provisions of Health and Safety Code § 40440.5, 40440.8, and 40728.5; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rule 445 – Wood-Burning Devices and Proposed Amended Rule 444 – Open Burning as proposed would result in foreseeable cost impacts as described in the Staff Report; and

**WHEREAS**, the SCAQMD Governing Board has actively considered the Socioeconomic Impact Assessment and has made a good faith effort to minimize such impacts; and

**WHEREAS**, the SCAQMD Governing Board has determined that a need exists to adopt Proposed Amended Rule 445 – Wood-Burning Devices and Proposed Amended Rule 444 – Open Burning to implement control measures BCM-01 and -02 from the 2012 Air Quality Management Plan. A need also exists to adopt PAR 445 and 444 to further protect the public from harmful exposure to wood smoke; and

**WHEREAS**, the SCAQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from California Health and Safety Code § 39002, 40000, 40001, 40702, 40725 through 40728, inclusive and 41700; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rule 445 – Wood-Burning Devices and Proposed Amended Rule 444 – Open Burning as proposed is written or displayed so that its meaning can be easily understood by the persons directly affected by it; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rule 445 – Wood-Burning Devices and Proposed Amended Rule 444 – Open Burning as proposed is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or federal or state regulations; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rule 445 – Wood-Burning Devices and Proposed Amended Rule 444 – Open Burning as proposed does not impose the same requirements as any existing State or federal regulations and the proposed rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the AQMD; and

**WHEREAS**, the SCAQMD Governing Board in adopting this regulation, references the following statutes which the AQMD hereby implements, interprets or makes specific: California Health and Safety Code § 40001 (rules to achieve ambient air quality standards), 40440 (rules to carry out the Air Quality Management Plan), and 41700 (prohibition of nuisance); and

**WHEREAS**, the SCAQMD Governing Board finds and determines, taking into consideration the factors in §(d)(4)(D) of the Governing Board Procedures, that the modifications which have been made to Proposed Amended Rule 445 – Wood-Burning Devices and Proposed Amended Rule 444 – Open Burning since notice of public hearing was published do not significantly change the meaning of the proposed project within the meaning of Health and Safety Code §40726; and

**WHEREAS**, the SCAQMD specifies the Assistance Deputy Executive officer for Proposed Amended Rule 445 – Wood-Burning Devices and Proposed Amended Rule 444 – Open Burning as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of this proposed rule is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

**WHEREAS**, the SCAQMD Governing Board has determined that there is a problem that Proposed Amended Rule 445 – Wood-Burning Devices and Proposed Amended Rule 444 – Open Burning as proposed will help alleviate (including attainment of State and federal ambient air quality standards and protection of public health from harmful exposure to wood smoke); and

**WHEREAS**, a public hearing has been properly noticed in accordance with the provisions of Health and Safety Code § 40725; and

**WHEREAS**, the SCAQMD Board has held a public hearing in accordance with all provisions of law.

**NOW, THEREFORE, BE IT RESOLVED**, that because no significant adverse environmental impacts were identified as a result of implementing Proposed Amended Rule 445 – Wood-Burning Devices and Proposed Amended Rule 444 – Open Burning, Findings, a Statement of Overriding Considerations, and a Mitigation Monitoring Plan are not required;

**BE IT FURTHER RESOLVED** that the Governing Board of the SCAQMD does hereby amend, pursuant to the authority granted by law, Proposed Amended Rule 445 – Wood-Burning Devices, as set forth in the attached, and incorporated herein by this reference;

**BE IT FURTHER RESOLVED** that the Governing Board of the SCAQMD does hereby amend, pursuant to the authority granted by law, Proposed Amended Rule 444 – Open Burning, as set forth in the attached, and incorporated herein by this reference. *(Note: The portions of PAR 444 amendments related to beach fire rings have been continued to the June 7, 2013 Governing Board meeting. These provisions include paragraphs (b)(11) and (c)(7), subparagraph (d)(3)(G), and paragraphs (h)(5) and (6).)*

DATE: \_\_\_\_\_

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CLERK OF THE BOARDS

# ATTACHMENT F

Adopted March 7, 2008  
(PAR 445 April 24, 2013 Version)

## PROPOSED AMENDED RULE 445. WOOD-BURNING DEVICES

- (a) Purpose  
The purpose of this rule is to reduce the emission of particulate matter from wood-burning devices.
- (b) Applicability  
The provisions of this rule shall apply to specified persons or businesses within the South Coast Air Basin portion of the South Coast Air Quality Management District:
- (1) Any person that manufactures, sells, ~~or~~ offers for sale, or installs a wood-burning device;
  - (2) Any commercial firewood seller facility that sells, offers for sale, or supplies wood or other wood-based fuels intended for burning in a wood-burning-device or portable outdoor wood-burning device; and
  - (3) Any property ~~land~~ owner or ~~land~~ tenant occupier that operates a wood-burning device or portable outdoor wood-burning device.
- (c) Definitions
- (1) COMMERCIAL WOOD-BASED FUEL SELLER FIREWOOD FACILITY means any operation that has a business license that sells, or offers for sale, or supplies; packaged, bundled or bulk firewood, manufactured firelogs, or wood pellets.
  - (2) COOKSTOVE means any wood or wood-based fuel-fired device that is designed and used primarily for cooking food and has the following characteristics as defined in Title 40 of the Code of Federal Regulations Section 60.531, February 28, 1988, or any subsequent revision ~~ed~~:
    - (A) An oven, with a volume of 0.028 cubic meters (1 cubic foot) or greater, and an oven rack;
    - (B) A device for measuring oven temperatures;
    - (C) A flame path that is routed around the oven;
    - (D) A shaker grate;
    - (E) An ash pan;
    - (F) An ash clean-out door below the oven; and

- (G) The absence of a fan or heat channels to dissipate heat from the appliance.
- (3) DEDICATED GASEOUS-FUELED FIREPLACE means any indoor or outdoor fireplace, including, but not limited to, a gas log fireplace, either constructed on-site, or factory built, fueled exclusively with a gaseous fuel such that the burner pan and associated equipment are affixed to the masonry or metal base of the fireplace.
- (4) FIREPLACE means any permanently installed indoor or outdoor masonry or factory-built device used for aesthetic or space-heating purposes and designed to operate with an air-to-fuel ratio greater than or equal to 35-to-1.
- (5) LOW INCOME HOUSEHOLD means any household that receives financial assistance through reduced electric or gas bills from an electric or natural gas utility based on household income levels.
- (6) MANDATORY WINTER ~~WOOD~~ BURNING CURTAILMENT DAY ~~means~~
- (A) Means any calendar day or consecutive calendar days during the wood burning season so declared to the public by the Executive Officer when ambient levels of particulate matter of 2.5 microns in size or less (PM2.5) is forecast to exceed 30 35  $\mu\text{g}/\text{m}^3$  for a specific source/receptor area.
- (B) Applies to the entire South Coast Air Basin whenever a PM2.5 level of greater than 30  $\mu\text{g}/\text{m}^3$  is predicted for a source receptor area containing a monitoring station that has recorded a violation of the federal 24-hour PM2.5 National Ambient Air Quality Standard for either of the two previous three-year design value periods. The design value is the three-year average of the annual 98<sup>th</sup> percentile of the 24-hour values of monitored ambient PM2.5 data.
- (7) MANUFACTURED FIRELOG means a commercial product expressly manufactured for use to simulate a wood burning fire in a wood-burning device.
- (8) MASONRY HEATER means any permanently installed device that meets the definition of a masonry heater in ASTM E 1602-03.
- (9) NEW DEVELOPMENT means residential or commercial, single or multi-building unit, which begins construction on or after March 9, 2009. For the purposes of this definition, construction has begun when the building



permit has been approved or when the foundation for the structure is started, whichever occurs first.

- (10) PELLET-FUELED WOOD-BURNING HEATER means any wood-burning heater that is operated on any pellet fuel, and is either U.S. EPA Phase II-certified or exempted under U.S. EPA requirements as defined in Title 40 Code of Federal Regulations, Part 60, Subpart AAA, February 28, 1988, or any subsequent revisions.
- (11) PERMANENTLY INSTALLED means any device built or installed in such a manner that the device is attached to the ground, floor, or wall, and is not readily moveable. A free standing stove that is attached to an exhaust system that is built into or through a wall is considered permanently installed.
- (12) PORTABLE OUTDOOR WOOD-BURNING DEVICE means any portable outdoor device burning any ~~solid~~ wood-based fuel for aesthetic or space heating purposes including, but not limited to, fireplaces, burn bowls, and chimineas located on property zoned for residential uses.
- (13) SEASONED WOOD means wood of any species that has been sufficiently dried so as to contain 20 percent or less moisture content by weight as determined by
  - (A) ASTM Test Method D 4442-92, Standard Test Method for Use and Calibration of Hand-Held Moisture Meters; or
  - (B) A ~~or~~ a hand-held moisture meter operated in accordance with ASTM Test Method D 4444-92, Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters; or
  - (C) An ~~an~~ alternative method approved by the Executive Officer, the California Air Resources Board, and the U.S. Environmental Protection Agency.
- (14) SOLE SOURCE OF HEAT means the only permanent source of heat that is capable of meeting the space heating needs of a household.
- (15) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange County as defined in California Code of Regulations, Title 17, Section 60104.
- (16) TREATED WOOD means wood of any species that has been chemically impregnated, painted, coated or similarly modified to improve resistance to insects, wood rot and decay, or weathering.

- (17) U.S. EPA ~~PHASE II~~-CERTIFIED WOOD-BURNING HEATER means any device certified by the U.S. EPA to meet the performance and emission standards as defined in Title 40 Code of Federal Regulations, Part 60, Subpart AAA, February 28, 1988, or any subsequent revisions.
- (18) WOOD-BASED FUEL means any wood, wood-based product, or non-gaseous or non-liquid fuel, including but not limited to manufactured firelogs, wood or pellet products. For the purpose of this rule, charcoal is not considered a wood-based fuel.
- (~~19~~ 18) WOOD-BURNING DEVICE means any fireplace, wood-burning heater, ~~or~~ pellet-fueled wood burning heater, or any similarly open or enclosed, permanently installed, indoor or outdoor device burning any wood-based solid fuel for aesthetic purposes, which has a heat input of less than one million British thermal units per hour (Btu/hr).
- (~~20~~ 19) WOOD-BURNING HEATER means an enclosed, wood-burning device capable of space heating that meets all the criteria defined in Title 40 Code of Federal Regulations Section 60.531, February 28, 1988, or any subsequent revisions including, but not limited to, wood stoves and wood-burning fireplace inserts.
- (~~21~~ 20) WOOD BURNING SEASON means the consecutive entire months of November, December, January, and February.
- (22) WOOD-FIRED COOKING DEVICE means any cookstove, wood-fired oven or grill, or any device designed for burning any wood-based fuel for cooking purposes.
- (d) Requirements
- (1) No person shall ~~install a~~ permanently installed a wood-burning device into any new development.
- (2) Notwithstanding the requirements of paragraph (d)(1), ~~effective September 8, 2008,~~ no person shall sell, offer for sale, supply, or install, a new or used permanently installed indoor or outdoor wood-burning device or gaseous-fueled device unless it is one of the following:
- (A) A U.S. EPA ~~Phase II~~-Certified wood-burning heater; or
- (B) A pellet-fueled wood-burning heater; or
- (C) A masonry heater; or
- (~~D~~) ~~A wood-burning device or fireplace determined to meet the U.S. EPA particulate matter emission standard established by Title 40~~

~~Code of Federal Regulations, Part 60, Subpart AAA, February 28, 1988 or subsequent revisions; or~~

~~(D E)~~ A dedicated gaseous-fueled fireplace.

(3) No person shall burn any product not intended for use as fuel in a wood-burning device including, but not limited to, garbage, treated wood, particle board, plastic products, rubber products, waste petroleum products, paints, coatings or solvents, or coal.

(4) A commercial firewood seller facility shall only sell seasoned wood from July 1 through the end of February the following year. Any commercial firewood seller facility may sell seasoned as well as non-seasoned wood during the remaining months.

(5) Labeling and Sell-Through Provision

(A) Effective (six months from the date of adoption), no commercial firewood seller shall sell, offer for sale, or supply wood-based fuel without first attaching a permanently affixed indelible label to each package or providing written notice to each buyer at the time of purchase of bulk firewood that at a minimum states the following:

Use of this and other solid fuel products may be restricted at times by law. Please check (Toll-Free Number) or (Web Address) before burning.

(i) Alternative language, toll-free telephone number or web address for the information specified in subdivision (g) may be used, subject to Executive Officer approval.

(ii) The Executive Officer shall specify guidelines for the aforementioned labeling requirements.

(B) Any wood-based fuel packaged prior to (the date of implementation as specified in paragraph (d)(5)(A)) may be sold, offered for sale or supplied up to (two years from date of implementation as specified in paragraph (d)(5)(A)).

(e) Mandatory Winter Wood Burning Curtailment Program (effective during the months of November, December, January, and February)

~~Effective beginning November 1, 2011, a~~ No person shall operate an indoor or outdoor wood-burning device, or portable outdoor wood-burning device, or wood-fired cooking device during the wood burning season when a mandatory

winter ~~w~~ood burning curtailment ~~day~~ is forecast for the specific region where the device is located, or on a Basin-wide basis as defined in paragraph (c)(6). ~~within the South Coast Air Basin.~~

(f) Exemptions

- (1) The provisions of this rule shall not apply to wood-fired cooking devices designed and used for commercial purposes ~~woodstoves~~.
- (2) The provisions of paragraph (d)(1) shall not apply to new developments where there is no existing infrastructure for natural gas service within 150 feet of the property line or those 3,000 or more feet above mean sea level.
- (3) The provisions of paragraph (d)(2) shall not apply to an indoor or outdoor wood-burning device that is permanently installed and included in the sale or transfer of any existing development.
- (4) The provisions of (d)(2) shall not apply to properties that are registered as a historical site, or are contributing structures located in a Historic Preservation Overlay Zone, as determined by the applicable, federal, State, or local agency. Contributing structures are those buildings which are examples of the predominate styles of the area, built during the time period when the bulk of the structures were built in the Historic Preservation Overlay Zone.
- (5) The provisions of (d)(3) shall not apply to manufactured firelogs.
- (6) The provisions of (d)(5) shall not apply to wood-based fuel intended for the cooking, smoking, or flavoring of food.
- (7) (6) The provisions of subdivision (e) shall not apply under the following circumstances:
  - (A) Residential or commercial properties where a wood-burning device is the sole source of heat; or
  - (B) A low income household; or
  - (C) Residential or commercial properties where there is no existing infrastructure for natural gas service within 150 feet of the property line; or
  - (D) Residential or commercial properties located 3,000 or more feet above mean sea level; or
  - (E) Ceremonial fires exempted under Rule 444 - Open Burning.

(g) Administrative Requirements

The Executive Officer will provide public notice of a mandatory ~~wood~~ winter burning curtailment through one or more of the following methods:

- (1) A recorded telephone message;
- (2) Messages posted on the South Coast Air Quality Management District web site;
- (3) Electronic mail messages to persons or entities that have requested such ~~electronic~~ notice;
- (4) Notifying broadcast and print media operating within the boundaries of the South Coast Air Basin; and
- (5) Any additional method that the Executive Officer determines is appropriate.

(h) Penalties

Any person that violates the provisions of subdivision (e) is subject to the following:

- (1) For first time violators during each wood burning season, completion of a wood smoke awareness course that has been approved by the Executive Officer or payment of a penalty of \$50;
- (2) For second time violators during each wood burning season, payment of a penalty of \$150 or submission of proof of installation of a dedicated gaseous-fueled fireplace within 90 days after receiving the ~~n~~Notice of ~~v~~Violation; and
- (3) For third time violators during each wood burning season, payment of a penalty of \$500 or implementation of an environmentally beneficial project as derived through the mutual settlement process.

(i) Severability

If any provision of this rule is held by judicial order to be invalid, or invalid or inapplicable to any person or circumstance, such order shall not affect the validity of the remainder of this rule, or the validity or applicability of such provision to other persons or circumstances.

## ATTACHMENT G

(Adopted October 8, 1976)(Amended October 2, 1981)  
(Amended October 2, 1987)(Amended December 21, 2001)  
(Amended November 7, 2008)  
(PAR 444, April 24, 2013 Version)

### **PROPOSED AMENDED RULE 444.      OPEN BURNING**

(a) Purpose

The purpose of this rule is to ensure open burning in the District is conducted in a manner that minimizes emissions and impacts, and that smoke is managed consistent with state and federal law in order to protect public health and safety.

(b) Applicability

The provisions of this rule shall apply to any person conducting or allowing any open burning including, but not limited to:

- (1) Agricultural burning
- (2) Disposal of Russian thistle (*Salsola kali* or “tumbleweed”)
- (3) Prescribed burning
- (4) Fire prevention/suppression training
- (5) Open detonation or use of pyrotechnics
- (6) Fire hazard removal
- (7) Disposal of infectious waste, other than hospital waste
- (8) Research of testing materials, equipment or techniques
- (9) Disposal of contraband
- (10) Residential burning
- (11) Beach burning

(c) Definitions

- (1) AGRICULTURAL BURNING means open burning of vegetative materials produced wholly from the growing and harvesting of crops in agricultural operations, including the burning of grass and weeds in fence rows, ditch banks and berms in non-tillage orchard operations, fields being prepared for cultivation, agricultural wastes, and the operation or maintenance of a system for the delivery of water for agricultural operations.
- (2) AGRICULTURAL OPERATIONS means any business occurring on a ranch or farm directly related to:

- (A) Growing of crops
  - (B) Raising of fowl or other animals for the primary purpose of making a profit or for a livelihood
  - (C) Conducting agricultural research or instruction by an educational institution
- (3) **AGRICULTURAL WASTES** means unwanted or unsalable materials produced wholly from agricultural operations directly related to the growing of crops or raising of animals for the primary purpose of making a profit or for a livelihood. Agricultural wastes do not include items such as plastic, rubber, ornamental or landscape vegetation, chemically treated wood, shop wastes, construction and demolition material, material containing asbestos, garbage, oil filters, tires, tar paper, pesticide and fertilizer containers, broken boxes, pallets, sweat boxes, packaging material, packing boxes or any other material produced in the packaging or processing of agricultural products. Orchard or vineyard waste or any other material, generated as a result of land use conversion to nonagricultural purposes is not agricultural waste.
- (4) **AIR QUALITY INDEX (AQI)** is a value established by the federal Environmental Protection Agency (EPA) to measure the level of the five major air pollutants regulated by the Clean Air Act. The values range from 0 to 500 and are divided into six categories; higher values indicate greater levels of pollution and greater associated health concerns. The following summarizes the AQI:
- (A) 50 or below is Good
  - (B) 51 through 100 is Moderate
  - (C) 101 through 150 is Unhealthy for Sensitive Groups
  - (D) 151 through 200 is Unhealthy
  - (E) 201 through 300 is Very Unhealthy
  - (F) Over 300 is Hazardous
- (5) **APPROVED IGNITION DEVICES** means those instruments or materials that will ignite agricultural waste without the production of black smoke. This would include such devices using liquid petroleum gas, butane, propane, or diesel oil burners and flares where the device produces a flame and the flame is then used for ignition.

- (6) APPROVED IGNITION FUELS means pipeline quality natural gas, liquefied petroleum gas, or a petroleum liquid having an API gravity of at least 30.
- (7) ~~BEACH BURNING~~ means any recreational, ceremonial or open burning conducted in any public coastal area, marked by an accumulation of sand, stone, or gravel that has been deposited by the tide or ocean waves, including any adjacent areas used for beach access or recreation. For the purposes of this rule, beach burning does not include the use of charcoal or gaseous or liquid fuels, in the preparation or warming of food for human consumption.
- (8) ~~7~~ BURN AUTHORIZATION NUMBER is the number that is assigned to a burn project upon being granted approval by the Executive Officer.
- (9) ~~8~~ BURN MANAGEMENT PLAN means a document prepared by an agricultural operator for a project which provides a description of the project, and other information as required under subparagraph (d)(7)(D).
- (10) ~~9~~ BURN PROJECT means an active or planned prescribed burn, agricultural burn, fire prevention/suppression training, a naturally ignited wildland fire managed for resource benefits, or any other burn approved by the Executive Officer.
- (11) ~~10~~ EMERGENCY BURN PLAN means a document prepared by an agricultural operator for open burning as an emergency measure to protect crops from freezing which provides a description of the project, and other information as required under subparagraph (h)(4)(C).
- (12) ~~11~~ FIELD CROP means crop, other than fruit or vegetable, which is grown for agricultural purposes.
- (13) ~~12~~ FIRE HAZARD means a hazardous condition involving combustible, flammable, or explosive material that could present a substantial threat to life or property, as declared by a fire protection agency.
- (14) ~~13~~ FIRE PREVENTION/SUPPRESSION TRAINING means the instruction of employees in the methods of preventing or suppressing fires.
- (15) ~~14~~ FIRE PROTECTION AGENCY means any public agency with the responsibility and authority to protect people, property, and the environment from fire, within its respective area of jurisdiction.
- (16) ~~15~~ HEAVY FUELS means materials that burn slowly, sustain heat, and are difficult to extinguish. Heavy fuels include large downed woody materials such as logs and branches.



- (17 16) **IMMINENT FIRE HAZARD** means a fire hazard that presents an immediate danger to property or the health and/or safety of a person or persons and for which direct abatement by fire is necessary as directed by a fire protection agency. An imminent fire hazard is distinguished from a prescribed burn by the immediate or urgent action needed to alleviate a threat.
- (18 17) **LAND MANAGER** means any federal, state, local, or private entity that administers, directs, oversees, or controls the use of public or private land, including the application of fire to the land.
- (19 18) **LIGHT FUELS** means materials that burn quickly with a short period of intense heat such as grass and field crops.
- (20) MANDATORY WINTER BURNING CURTAILMENT means a period of time during the consecutive months of November through February where the burning of solid fuels is restricted for portions of the South Coast Air Basin at elevations below 3,000 feet above Mean Sea Level (MSL) based on the air quality criteria contained in AQMD Rule 445 (Wood-Burning Devices).
- (21 19) **MARGINAL BURN DAY** means a day in an air basin when open burning for individual projects is restricted to designated source/receptor areas and is not otherwise prohibited by the California Air Resources Board (CARB) or the Executive Officer of the District. A marginal burn day is declared when:
- (A) At least one of the meteorological criteria for an air basin is predicted to be met;
  - (B) The AQI throughout the basin is predicted to be 150 or less; ~~and~~
  - (C) The AQI in the designated source/receptor area(s) is predicted to be 100 or less; and
  - (D) The designated source/receptor area(s) is not further restricted by a mandatory winter burning curtailment pursuant to AQMD Rule 445 (Wood-Burning Devices).
- (22 20) **METEOROLOGICAL CRITERIA** defines the daily predicted meteorological conditions that need to be satisfied to permit open burning for an air basin. The criteria are as follows:
- (A) Burn Area 40: South Coast Air Basin (at least one criterion must be satisfied):

- (i) Near 6:00 a.m., the expected height of the inversion base, if any, at Los Angeles International Airport is 1,500 feet above mean sea level or higher.
  - (ii) The expected maximum mixing height during the day is 3,500 feet above the surface.
  - (iii) The expected mean surface wind between 6:00 a.m. and noon is greater than five miles per hour.
- (B) Burn Area 53: Mojave Desert Air Basin (all criteria must be satisfied):
- (i) Near the time of day when the surface temperature is at a minimum, the temperature at 3,000 feet above the surface is not warmer than the surface temperature by more than 13 degrees Fahrenheit.
  - (ii) The expected temperature at 3,000 feet above the surface is colder than the expected surface temperature by at least 11 degrees Fahrenheit for 4 hours.
  - (iii) The expected daytime wind speed at 3,000 feet above the surface is at least 5 miles per hour.
- (C) Burn Area 55: Salton Sea Air Basin (at least three criteria must be satisfied):
- (i) Near the time of day when the surface temperature is at a minimum, the temperature at 3,000 feet above the surface is not warmer than the surface temperature by more than 13 degrees Fahrenheit.
  - (ii) The expected temperature at 3,000 feet above the surface is colder than the expected surface temperature by at least 11 degrees Fahrenheit for 4 hours.
  - (iii) The expected daytime wind speed at 3,000 feet above the surface is at least 5 miles per hour.
  - (iv) The expected daytime wind direction in the mixing layer is not southeasterly.

(23 24)NO BURN DAY means a day in an air basin during ~~on~~ which open burning is prohibited by the CARB or Executive Officer of the District. A no burn day is declared when:

- (A) None of the meteorological criteria for an air basin are met, or

- (B) The AQI in any area of the basin is predicted to be greater than 150.
- (24 22) OPEN BURNING COMBUSTION/OPEN DETONATION means the ignition and subsequent burning, or ignition, rapid decomposition and subsequent burning of solid, liquid, or gaseous materials, outside of a combustion chamber with or without a visible flame and not directed through a chimney or flue.
- (25 23) PERMISSIVE BURN DAY means a day in an air basin during ~~on~~ which open burning is not prohibited by the CARB or Executive Officer of the District. A permissive burn day is declared when:
- (A) At least one of the meteorological criteria for an air basin is predicted to be met, ; and
- (B) The AQI throughout the basin is predicted to be 100 or less- and
- (C) The designated source/receptor area(s) is not further restricted by a mandatory winter burning curtailment pursuant to AQMD Rule 445 (Wood-Burning Devices).
- (26 24) PRESCRIBED BURNING means planned open burning conducted by a public agency, or through a cooperative agreement or contract involving a public agency, identified on lands selected in advance for removal of:
- (A) Vegetation from land predominantly covered with chaparral, trees, grass, or standing brush.
- (B) Forest vegetation or debris for the purposes of forest protection.
- (C) Brush, weeds, arundo, or other plant matter to promote a healthier environment for plant or animal species or to re-establish native plant species.
- (D) Disease and pest prevention.
- (E) Fire prevention/suppression training consuming greater than 10 acres.
- (27) PRODUCT TESTING means the evaluation of commercial products designed to detect the presence of flame or smoke or intended to prevent equipment damage due to flame.
- (28 25) RESIDENTIAL BURNING means open burning for the purposes of disposing of combustible or flammable solid waste, excluding Russian thistle, from a specific residence on its premises.

(29 26) SENSITIVE RECEPTOR LOCATIONS include schools, daycare centers, hospitals, and convalescent homes, and other locations where children, chronically ill individuals, or other sensitive persons could be exposed.

(30 27) SMOKE MANAGEMENT PLAN means a document prepared for each open burning event or project by land managers that provides information and procedures to minimize smoke impacts.

(31 28) SOURCE/RECEPTOR AREAS. A source area is that area in which contaminants are discharged and a receptor area is that area in which the contaminants accumulate and are measured. Any ~~of the~~ areas can be a source area, a receptor area, or both a source and receptor area. The source/receptor areas are delineated on the attached map (Attachment 1).

(32 29) WILDLAND means:

(A) “Wildland” means an area where development is generally limited to roads, railroads, power lines, and widely scattered structures. Such land is not cultivated (i.e., the soil is disturbed less frequently than once in 10 years), is not fallow, and is not in the United States Department of Agriculture (USDA) Conservation Reserve Program. The land may be neglected altogether or managed for such purposes as wood or forage production, wildlife, recreation, wetlands, or protective plant cover.

(B) For the California Department of Forestry and Fire Protection only, “Wildland” as specified in California Public Resources Code (PRC) section 4464(a) means any land that is classified as a state responsibility area pursuant to article 3 (commencing with section 4125) of chapter 1, part 2 of division 4 and includes any such land having a plant cover consisting principally of grasses, forbs, or shrubs that are valuable for forage. “Wildland” also means any lands that are contiguous to lands classified as a state responsibility area if wildland fuel accumulation is such that a wildland fire occurring on these lands would pose a threat to the adjacent state responsibility area.

(d) Requirements and Prohibitions

(1) A person shall not conduct or allow open burning unless all of the following are met:

(A) The Executive Officer has declared the day a permissive burn day or a marginal burn day on which burning is permitted in the

applicable source/receptor area and such burning is not prohibited by the applicable public fire protection agency.

- (B) The Executive Officer or the applicable fire protection agency has issued a written permit for the burn. For disposal of Russian thistle, subject to paragraph (d)(2)(C), a permit may also be issued by the Director of Forestry and Fire Protection or a County Agricultural Commissioner, pursuant to California Health and Safety Code Section 41809.
- (C) The Executive Officer has authorized the burn by issuing a Burn Authorization Number for each day for each open burning event.
  - (i) The Executive Officer has received the Burn Authorization Number request by 4:00 p.m. on the day prior to the burn.
  - (ii) The Executive Officer may delay issuing a Burn Authorization Number until such time that an inspection of the proposed Burn Project can be conducted, in order to determine whether the open burning event complies with the provisions of the rule.
- (D) All site-specific permit conditions are met, pursuant to Rule 208 – Permit and Burn Authorization for Open Burning.
- (2) The Executive Officer may authorize open burning for:
  - (A) Agricultural burning
  - (B) Prescribed burning
  - (C) Disposal of Russian thistle
  - (D) Abatement of a fire hazard that a fire protection agency determines cannot be abated by an economically, ecologically and logistically viable option
  - (E) Disposal of waste infected with an agricultural pest or disease hazardous to nearby agricultural operations and upon the order of the County Agricultural Commissioner
  - (F) Disposal of infectious waste, other than hospital waste, upon the order of the County Health Officer to abate a public health hazard
  - (G) Use of pyrotechnics for the creation of special effects during filming of motion pictures, videotaping of television programs or other commercial filming or video production activities provided untreated wood, charcoal or Approved Ignition Fuels are used

- (H) Disposal of contraband in the possession of public law enforcement personnel provided they demonstrate that open burning is the only reasonably available method for safely disposing of the material
  - (I) Fire prevention/suppression training exercises, provided notifications and compliance with all requirements of Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities shall be required when applicable
  - (J) Researching or testing fire retardant properties of materials (or enclosures) or the efficacy of fire suppression techniques or devices
- (3) A person is prohibited from open burning for:
- (A) Residential burning
  - (B) Disposal of waste, except as specified in (d)(2) above, including hospital waste
  - (C) Disposal of materials generated as a result of land use conversion for non-agricultural purposes
  - (D) Disposal of materials from the production or storage of military ordnance, propellants, or pyrotechnics unless a fire protection agency, law enforcement agency or governmental agency having jurisdiction determines that onsite burning or detonation in place is the only reasonably available method for safely disposing of the material
  - (E) Suppression of wildland fires, except those set by fire protection agencies, for the purpose of saving life or property
  - (F) Complete burning of existing structures for fire prevention/suppression training exercises
  - (G) Beach burning, on and after January 1, 2015. However, a city or county may, through formal action of a city council or board of supervisors, make this prohibition effective sooner than January 1, 2015.
- (4) A person shall not commence:
- (A) Open burning for agricultural field crops before 10:00 a.m. or later than 5:00 p.m.
  - (B) Open burning, other than for agricultural field crops, except as authorized in an approved Smoke Management Plan:

- (i) Earlier than one hour after sunrise
  - (ii) Later than two hours before sunset, with no new ignition, or fuels added to an existing fire
- (5) A person shall use only approved ignition devices to ignite open burning.
- (6) A person shall not transport vegetative waste for the purpose of open burning from one property to another, unless it is necessary to avoid burning within 1,000 feet of a sensitive receptor.
- (7) Additional requirements for agricultural burning:
  - (A) A person shall not conduct or allow the open burning of agricultural waste unless it has been allowed to dry for the following minimum times:
    - (i) Trees and large branches (3 in. or greater): 6 weeks
    - (ii) Prunings and small branches (1 in. to less than 3 in. diameter): 4 weeks
    - (iii) Wastes from field crops that are cut in a green condition: 4 weeks
    - (iv) Fine fuels (0.25 in. to less than 1 in. diameter): 3 weeks
    - (v) Very fine fuels (less than 0.25 in.): 10 days
  - (B) A person shall not conduct or allow the open burning of agricultural waste unless it is free of dirt, soil, and visible moisture.
  - (C) A person shall ignite rice, barley, oat and wheat straw only by strip-firing or by backfiring into the wind unless a fire protection agency declares such actions would constitute a fire hazard.
  - (D) A person shall not conduct or allow the open burning of agricultural waste unless a Burn Management Plan is approved in writing by the Executive Officer for any project greater than 10 acres or a project that produces more than one ton of particulate matter emissions, as determined using EPA AP-42 or equivalent emissions factors approved by the Executive Officer, CARB, and EPA. At a minimum, the Burn Management Plan shall contain the following information:
    - (i) Location, types, and amounts of material to be burned
    - (ii) Expected duration of the fire from ignition to extinction
    - (iii) Identification of responsible personnel, including telephone contacts

- (iv) Identification and location of all smoke sensitive areas
- (v) Calculation of the particulate emissions tonnage, when the particulate emissions tonnage is selected as the criteria for determining the project size
- (E) A person shall not conduct or allow the open burning of agricultural waste unless the burn is located farther than 1,000 feet from a sensitive receptor location.
- (8) Additional requirements for prescribed burning:
  - (A) A person shall conduct or allow prescribed burning only when the fires are set by, under the jurisdiction of, or pursuant to the orders or requirements of a fire protection agency.
  - (B) A person shall not conduct or allow prescribed burning unless a Smoke Management Plan is approved in writing by the Executive Officer for any project greater than 10 acres or that produces more than one ton of particulate matter emissions, as determined using EPA AP-42 or equivalent emissions factors approved by the Executive Officer, CARB, and EPA. Smoke Management Plans shall be updated annually. At a minimum, the Smoke Management Plan shall contain the following information:
    - (i) Location, types, and amounts of material to be burned
    - (ii) Expected duration of the fire from ignition to extinction
    - (iii) Identification of responsible personnel, including telephone contacts
    - (iv) Identification and location of all smoke sensitive areas
    - (v) Calculation of the particulate emissions tonnage
  - (C) A person shall not conduct or allow prescribed burning unless a Smoke Management Plan is approved in writing by the Executive Officer for any project greater than 100 acres or that produces more than 10 tons of particulate matter emissions, as determined using EPA AP-42 or equivalent emissions factors approved by the Executive Officer, CARB, and EPA. Smoke Management Plans shall be updated annually. At a minimum, the Smoke Management Plan shall contain the information required by subparagraph (d)(8)(B) and the following information:
    - (i) Identification of meteorological conditions necessary for burning



- (ii) Smoke management criteria the land manager will use for making burn ignition decisions
  - (iii) Projections, including a map, of where the smoke from burns is expected to travel both day and night
  - (iv) Specific contingency actions (such as fire suppression or containment) that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the Smoke Management Plan
  - (v) Evaluation of and consideration of emission reduction techniques including environmentally, economically, and logistically viable alternatives to burning
  - (vi) Discussion of public notification procedures
  - (D) The Executive Officer shall prioritize burn authorization requests based upon:
    - (i) The level of training of the person conducting the burn as identified in the Burn Management Plan and Smoke Management Plan.
    - (ii) The measures identified in the Smoke Management Plan proposed to reduce emissions.
  - (E) Notwithstanding subparagraph (d)(1)(A), the Executive Officer may allow prescribed burning on marginal burn days, provided a Smoke Management Plan has been approved.
- (e) The Executive Officer may allow the Maximum Daily Burn Acreage for Agricultural Burning and Prescribed Burning as follows:
- (1) For all areas within the District jurisdiction, excluding the Coachella Valley:
    - (A) 175 acres for prescribed wildland and range burning; and
    - (B) 175 acres for agricultural burning;
  - (2) For the Coachella Valley:
    - (A) 6 acres for prescribed wildland and range burning; and
    - (B) 41 acres for agricultural burning; and
  - (3) The provisions of this subdivision, limiting the maximum daily acreage, shall not apply to prescribed burning when a land manager has:
    - (A) Demonstrated that the prescribed burn is required to reduce a fire hazard that jeopardizes public health or safety; and

- (B) Submitted a satisfactory Smoke Management Plan that has been approved by the Executive Officer.
  
- (f) Administrative Requirements
  - (1) An Annual Post Burn Evaluation Report shall be submitted on or before January 31<sup>st</sup> of each calendar year for any open burn projects that require a Smoke Management Plan or a Burn Management Plan. The Report shall include, but not be limited to, the following:
    - (A) The type of material burned
    - (B) The total acreage permitted to burn
    - (C) The total acreage burned
    - (D) The total tons of material burned
    - (E) The estimated fuel loading in tons per acre
    - (F) The total of the estimated PM emissions
  - (2) Fire Protection Agencies within the District must submit copies of written burn permits to the Executive Officer quarterly.
  
- (g) Fees

If required by District Rule 306, any person conducting or allowing any open burning shall accompany the submittals required by subparagraphs (d)(7)(D), (d)(8)(B), (d)(8)(C), (h)(4)(C), and paragraph (f)(1) with applicable filing and evaluation fees pursuant to District Rule 306.
  
- (h) Exemptions
  - (1) The provisions of paragraphs (d)(1) and (d)(4) of this rule shall not apply in the case of an imminent fire hazard, as defined in this Rule.
  - (2) The provisions of subparagraphs (d)(1)(A), (d)(1)(B), (d)(1)(D) and clause (d)(1)(C)(ii) shall not apply to fire prevention/suppression training exercises or research, conducted by fire protection agencies, provided that:
    - (A) For training exercises not conducted within existing structures:
      - (i) Each training fire is limited to no more than 30 minutes duration,
      - (ii) The total cumulative burn time in a 24-hour period does not exceed:
        - (a) Four (4) hours for Light Fuel
        - (b) Six (6) hours for Heavy Fuels or a mixture of Light and Heavy Fuels

- (iii) Only Authorized Ignition Fuels are used.
  - (B) For training exercises conducted within existing structures, each training fire is limited to no more than 30 minutes in duration.
- (3) The provisions of subparagraphs (d)(1)(A), (d)(1)(B), (d)(1)(D) and clause (d)(1)(C)(ii) shall not apply to fire prevention/suppression training exercises or to product testing conducted by non-fire protection agencies provided that:
  - (A) Each fire is limited to no more than 30 minutes in duration,
  - (B) The total burn time does not exceed four (4) hours in a 24-hour period, and
  - (C) Only Authorized Ignition Fuels are used.
- (4) The provisions of subparagraphs (d)(1)(A) and (d)(7)(E) of this rule shall not apply to open burning as an emergency measure to protect crops from freezing provided that:
  - (A) Open burning is the most immediate or only option available;
  - (B) The temperature at the time of the requested open burning is reasonably anticipated to be below 40° Fahrenheit;
  - (C) An Emergency Burn Plan submitted by the person seeking to conduct open burning is approved by the Executive Office prior to conducting the burn. The Plan shall include, but not be limited to, the following:
    - (i) Location, types, and amounts of material to be burned
    - (ii) Type of crop being protected
    - (iii) Estimate of potential economic loss
    - (iv) Expected dates, time, and duration of the fire from ignition to extinction
    - (v) Identification of responsible personnel, including telephone contacts
    - (vi) Identification and location of all smoke sensitive areas
  - (D) All site-specific conditions imposed by the Executive Officer as part of the approved Emergency Burn Plan are met; and
  - (E) The person conducting the open burn shall notify the Executive Officer no more than 24 hours following the authorized burn to report the total amount of agricultural material burned.
- (5) The provisions of this rule shall not apply to:

- ~~(A) — Recreational fires or ceremonial fires, including fires conducted pursuant to United States Code, Title 4, Chapter 1, Section 8.~~
- ~~(B) — Open burning of natural gas, propane, untreated wood, or charcoal for the purpose of:
  - ~~(i) — Preparation or warming of food for human consumption; or~~
  - ~~(ii) — Generating warmth at a social gathering.~~~~
- (A) (C) Open burning located on islands 15 miles or more from the mainland coast.
- (B) (D) Fireworks displays.
- (C) (E) Pyrotechnics used for creation of special effects at theme parks.
- (D) (F) Detonation of explosives during:
  - (i) Quarry or mining operations
  - (ii) Bomb disposal by a law enforcement agency
  - (iii) Demolition of buildings or structures
- (E) (G) The use of pyrotechnics, detonation of explosives, or fire effects for creation of special effects during theatrical productions, filming of motion pictures, videotaping of television programs or other commercial filming or video production activities provided that:
  - (i) Each fire effect is limited to no more than 30 minutes in duration, and
  - (ii) The fuel is untreated wood, charcoal, or Authorized Ignition Fuels.

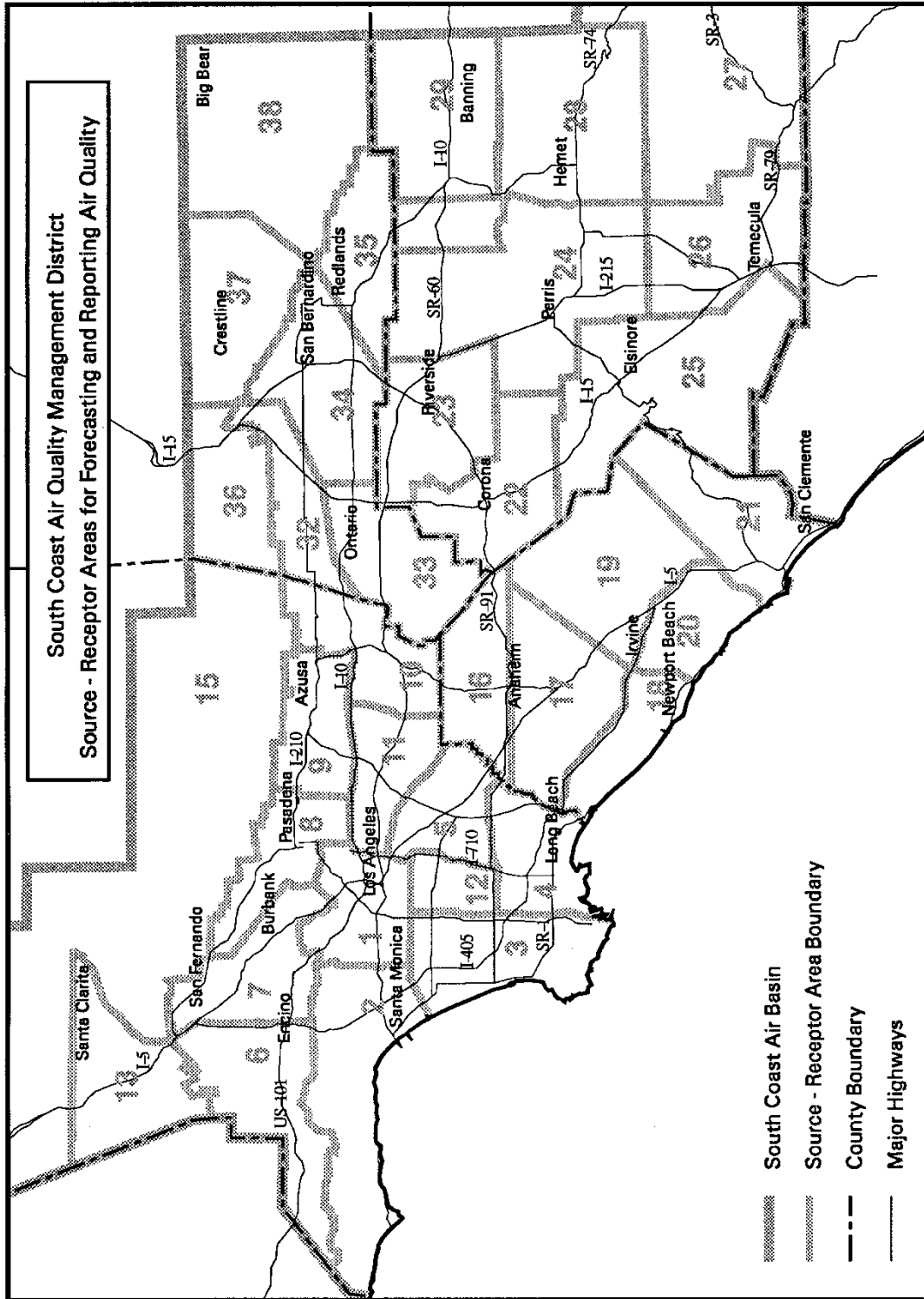
(6) Except for the requirements of subparagraph (d)(3), the provisions of this rule shall not apply to:

- (A) Recreational fires or ceremonial fires, including fires conducted pursuant to United States Code, Title 4, Chapter 1, Section 8.
- (B) Open burning of natural gas, propane, untreated wood, or charcoal for the purpose of:
  - (i) Preparation or warming of food for human consumption; or
  - (ii) Generating warmth at a social gathering.

(i) Severability

If any provision of this rule is held by judicial order to be invalid, or invalid or inapplicable to any person or circumstance, such order shall not affect the validity of the remainder of this rule, or the validity or applicability of such provision to other persons or circumstances.

ATTACHMENT 1



## ATTACHMENT H

# SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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### **Draft Final Staff Report**

**Proposed Amended Rule 445 – Wood-Burning Devices  
Proposed Amended Rule 444 – Open Burning**

**May ~~April~~ 2013**

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*Note to Reader:*

*Changes made to Draft Staff Report released on April 3, 2013  
are denoted with double underline and double ~~strike out~~.*

## **EXECUTIVE SUMMARY**

Residents of the South Coast Air Basin (Basin) are exposed to some of the highest ambient concentrations in the nation of PM<sub>10</sub> and PM<sub>2.5</sub>, collectively referred to as particulate matter or PM. Although smoke from biomass burning (firewood and open burning) is not the largest source of the region's fine particulate pollution, it is one of the last largely uncontrolled source of particulates, and air quality modeling indicates that significant air quality improvements can be achieved by reducing these emissions on an episodic basis (AQMD, 2012). Studies also continue to show the importance of reducing public exposure to PM, including biomass smoke (U.S. EPA, 2009). This is reflected in the U.S. EPA's recent decision to lower the PM<sub>2.5</sub> annual standard from 15 to 12  $\mu\text{g}/\text{m}^3$  to be more health protective (c.f. 78 FR 3,086-3,287, National Ambient Air Quality Standards for Particulate Matter, dated January 15, 2013<sup>1</sup>). Based on these air quality conditions and state and federal mandates, the 2012 Air Quality Management Plan (AQMP) focused on measures to attain the federal 24-hour PM<sub>2.5</sub> standard of 35  $\mu\text{g}/\text{m}^3$  and thus included control measures intended to further reduce PM emissions from residential wood combustion (BCM-01) and open burning sources (BCM-02).<sup>2</sup> The proposed amendments to Rule 445 (Wood-Burning Devices) and Rule 444 (Open Burning) are intended to implement these 2012 AQMP control measures to aid in achievement of the 24-hour PM<sub>2.5</sub> standard and to protect public health by reducing exposure of potentially high concentrations of wood smoke. In addition, AQMD staff has recently learned of resident's concern regarding adverse health effects and loss of enjoyment associated with open burning at beaches and proposes to prohibit burning of wood and other biomass fuels at beaches effective January 1, 2015. Under PAR 444 a city or county could, though formal action, make the prohibition effective sooner than January 1, 2015.

### **PAR 445**

One element of the 2012 AQMP residential wood combustion control measure BCM-01 included proposed changes to the threshold used to forecast no burn days. Specifically, proposed amended rule (PAR) 445 lowers the PM<sub>2.5</sub> forecast threshold used to declare a mandatory winter burning curtailment from 35  $\mu\text{g}/\text{m}^3$  (current federal PM<sub>2.5</sub> 24-hour standard) to 30  $\mu\text{g}/\text{m}^3$ . Similar thresholds are used in the Bay Area and Sacramento Metropolitan AQMD's wood smoke policies and regulations, and the lower value provides a margin of safety given the uncertainties associated with air quality forecasts. PAR 445 would also establish a Basin-wide winter burning curtailment whenever a PM<sub>2.5</sub> level of greater than 30  $\mu\text{g}/\text{m}^3$  is forecast at any monitoring station which has recorded violations of the federal 24-hour PM<sub>2.5</sub> standard in either of the previous two years. PAR 445 also requires commercial firewood or other wood-based fuel sellers to notify the public of the AQMD's Check Before You Burn program through a labeling program. Additional Rule 445 amendments are proposed to increase rule clarity.

It is anticipated that there may be an increase of up to 20 no-burn days with this lower threshold, although continued air quality improvements will reduce the frequency and

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<sup>1</sup> <http://www.gpo.gov/fdsys/pkg/FR-2013-01-15/pdf/2012-30946.pdf>

<sup>2</sup> Control Measure #2012 BCM-01, <http://www.aqmd.gov/aqmp/2012aqmp/DraftFinal/appIV-A.pdf> - page IV-A-17

geographical extent of no-burn days as the Basin approaches and reaches attainment. The 2012 control measure represents a State Implementation Plan (SIP) commitment to reduce PM emissions from wood burning devices by up to seven tons per episodic winter day by the year 2014. Cost impacts are expected to be minimal as wood burning in this area is done primarily for aesthetic purposes and there are cost-effective alternatives to burning wood for heat. An incentive program for cleaner hearth appliances is ongoing and is proposed to be enhanced in conjunction with adoption of PAR 445 to encourage the public to switch to cleaner hearth products, including gaseous-fueled devices that are exempt from burning curtailments.

#### **PAR 444**

For consistency and to maximize the episodic air quality benefits, the 2012 AQMP open burning control measure BCM-02 proposed that the Rule 444 prohibitions should be aligned with the PAR 445 requirements during the winter season. Accordingly, PAR 444 includes revisions to marginal and permissive burn day definitions that would limit open burning whenever a mandatory winter burning curtailment was called for individual source/receptor areas or the entire Basin under PAR 445. No revisions are proposed for open burning sources above 3,000 feet in elevation. A new definition is proposed to clarify an exemption for the testing of fire detection/suppression systems. A new definition is also added for beach burning and the existing exemptions for open burning for recreational, ceremonial and warming purposes are proposed to be amended to exclude beach burning. Additional Rule 444 amendments are proposed to increase rule clarity.

Although it is anticipated that there will be a slight increase in the number of no-burn days under PAR 444, there are no annual emissions reductions as the burning that would have occurred during winter months would likely be switched to other, non-episodic times of the year. Cost impacts are anticipated to be minimal as prohibited open burning would likely be shifted to other days and the Rule's existing exemptions for fire suppression and training exercises are unchanged. Relative to beach burning, quantification of emissions, and the anticipated reductions, are difficult as the amount of wood use varies and fires tend to include other materials, such as trash and waste wood. However, based on assumptions concerning a presumable wood burning rate of two to three bundles of packaged wood per fire ring per night in summer months and assuming full utilization of all fire rings, the approximately as many as 857 840 Basin fire rings are estimated to emit up to 0.16 to 0.25 ton per day of PM2.5. The change in estimated number of beach fire rings is based on results from field verification of fire rings that would be subject to PAR 444 provisions. It is anticipated that there would be a loss of revenue to the entities that charge for parking in areas where beach fires are conducted.

## **BACKGROUND**

#### **PAR 445**

Control Measure #BCM-03 (Emission Reductions from Wood-Burning Fireplaces and Stoves)<sup>3</sup> from the 2007 AQMP was implemented in March 2008 through adoption of AQMD Rule 445 - Wood Burning Devices (AQMD, 2008). Under the existing Rule provisions, only gaseous-fueled hearth devices are allowed to be installed in new developments. For existing residential and commercial developments (additions, remodels, etc.), Rule 445 requires wood

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<sup>3</sup> 2007 AQMP, Appendix IV-A, [http://www.aqmd.gov/aqmp/07aqmp/aqmp/Appendix\\_IV-A.pdf](http://www.aqmd.gov/aqmp/07aqmp/aqmp/Appendix_IV-A.pdf)

burning devices sold or installed to be U.S. EPA certified or equivalent. Rule 445 prohibits the burning of any product not intended for use as a fuel (e.g., trash) in a wood burning device and requires commercial firewood sellers to only sell seasoned firewood (20% or less moisture content) from July through February. Rule 445 also includes a mandatory winter burning curtailment program that extends from November 1 through the end of February each winter season. During a mandatory winter burning curtailment period (first implemented in the 2011/2012 winter season), the public is required to refrain from both indoor and outdoor wood-based fuel burning in specific areas where PM<sub>2.5</sub> air quality is forecast to exceed 35 µg/m<sup>3</sup> (federal 24-hour standard). The District has also implemented the Healthy Hearths™ program that includes a comprehensive education and outreach effort as well as financial incentives to encourage the public to switch to cleaner, gaseous-fueled hearth products. (<http://www.aqmd.gov/healthyhearths/index.htm>).

#### **PAR 444**

Rule 444 – Open Burning, was originally adopted in 1976 and is intended to reduce visible emissions and minimize public nuisance from smoke emissions. Currently, Rule 444 allows open burning on permissive burn days, provided that a permit and event authorization is obtained, and that such burning events are not prohibited by a fire protection agency. A permissive burn day is declared by the District when certain meteorological conditions are met in one or more of the defined source/receptor areas. Rule 444 also includes general requirements (i.e., burning time window and ignition device) for open burning, as well as particular requirements, such as moisture level and firing methods for agricultural burning, and a Smoke Management Plan for prescribed burning. In addition, Rule 444 sets District-wide maximum daily burn acreage for agricultural and prescribed burning with less restrictive requirements for training burns if the duration is less than 30 minutes and clean fuel is utilized.

The most recent Rule 444 amendments were adopted in 2008 to strengthen the rule provisions to be more health protective and update the rule to be based on the Air Quality Index (AQI) for forecasting “marginal”, “permissive”, and “no burn” days. The 2008 proposal also included several new requirements for agricultural burning and fire prevention/suppression training and prohibited agricultural burns within 1,000 feet of sensitive receptor locations. In order to partially recover the cost associated with running the open burn program, the 2008 proposal also established fees to be assessed for the filing and evaluation of the required plans and reports.

## **DESCRIPTION OF SOURCE CATEGORY**

### **Rule 445**

The following background information was obtained from CARB<sup>4</sup> and U.S. EPA<sup>5</sup> documents.

The types of devices that burn wood in a typical residence are: 1) fireplaces, 2) fireplace inserts, and 3) wood burning stoves (includes subcategories). The most common wood burning device in a home is the traditional, open-hearth (uncontrolled) fireplace. A fireplace is an inefficient method of heating a house and in some cases can have a negative heating

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<sup>4</sup> ARB (California Air Resources Board), Area Source Methodology, Section 7.1, Residential Wood Combustion, July 1997

<sup>5</sup> EPA, AP-42, Section 1.9, Residential Fireplaces, October 1996.

efficiency if the inside air is used as combustion air. Fireplace inserts are essentially wood-stove type devices that fit into a fireplace hearth. Wood stoves are stand alone devices that vent flue gas through an existing chimney or flue. They are enclosed wood heaters that control burning or burn time by restricting the amount of air that can be used for combustion.

Figure 1 presents a relative comparison of fine particulate emissions from various heating sources.

In recent years, hearth product manufacturers have initiated efforts to reduce emissions from wood-burning fireplaces. These efforts have included, but are not limited to, products developed under the U.S. EPA Phase 2 Qualified Fireplace Program.<sup>6</sup> According to the referenced web site, this program is a voluntary effort to encourage manufacturers to improve air quality through developing and distributing cleaner, more efficient wood-burning appliances. There are two general types of fireplace products under the program: Phase 2 Qualified Fireplaces and Phase 2 Qualified Fireplace Retrofit Devices. Phase 2 qualified fireplaces are stand alone hearth devices intended to be installed in new developments or room additions, while retrofit fireplace devices are intended to be installed into existing wood burning fireplaces. Rule 445 provisions do not allow the installation of U.S. EPA Phase 2 Qualified Fireplaces; however, U.S. EPA Phase 2 Qualified Fireplace Retrofit Devices are not prohibited by Rule 445 and therefore can be installed in existing wood-burning fireplaces; that is, residential fireplaces constructed before March 9, 2009. Appendix B has a list of answers to Frequently Asked Questions (FAQs) and the underlined text has been proposed to further clarify the types of devices, including U.S. EPA Phase 2 Qualified Retrofit Devices that can be installed into existing households. Changes to the list of FAQs may be made in the future to help answer implementation questions.

#### **Rule 444**

This rule currently prohibits various types of opening burning activities and sets forth the conditions under which certain activities may take place. Two key activities are those of agricultural and prescribed burning. However, the existing rule exempts recreational, ceremonial, and other open burning activities. Recently it has been proposed that Rule 444's exemptions should not include beach burning. Table 1 presents an inventory of beach fire pits based on available data. The change in the estimated total number of beach fire rings is from the results of a field verification of beach fire rings that are subject to PAR 444 provisions. Agricultural burning is open burning of vegetative materials produced from the growing and harvesting of crops, as well as field preparation in agricultural operations. Prescribed burning is a planned open burn of vegetative materials, usually conducted by a fire protection agency and/or department of forestry, to promote a more healthful habitat for plants and animals, to prevent plant disease and pests, and to reduce the likelihood of wildfires and associated damages. Training burns are hands-on trainings conducted by fire protection agencies on methods of preventing and/or suppressing fires.

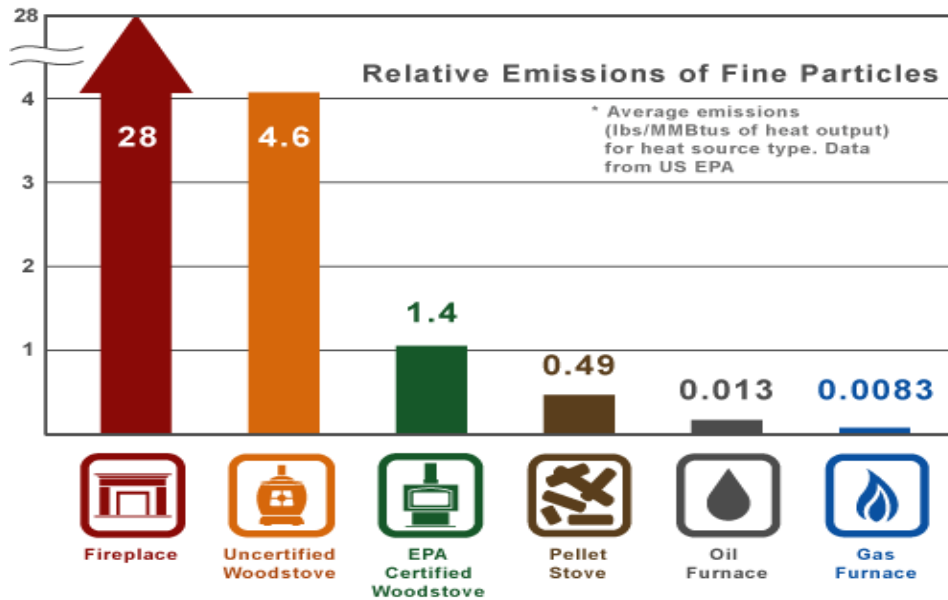
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<sup>6</sup><http://www.epa.gov/burnwise/participation.html> <http://www.epa.gov/burnwise/fireplacelist.html>

**Table 1**  
**Estimated Fire Pit Locations**

Beach Name	City	No. of Fire Pits
<b>LOS ANGELES COUNTY</b>		
Dockweiler State Beach	Playa del Rey	<del>90</del> <u>73</u>
<del>Wilder Annex (Pt. Fermin Park)</del>	<del>San Pedro</del>	<del>3</del>
Cabrillo Beach	San Pedro	6
<del>Leo Carrillo State Beach</del>	<del>Malibu</del>	<del>140</del>
		Total = <del>99</del> <u>79</u>
<b>ORANGE COUNTY</b>		
Bolsa Chica State Beach	Huntington Beach	<del>182</del> <u>178</u>
Huntington City Beach	Huntington Beach	<del>83</del> <u>112</u>
Huntington State Beach	Huntington Beach	<del>200</del> <u>240</u>
Balboa Beach	Balboa/Newport Beach	33
Corona Del Mar State Beach	Newport Beach	27
Aliso Beach County Park	South Laguna	7
Doheny State Beach	Dana Point	<del>32</del> <u>163</u>
Capistrano Beach Park	Capistrano	4
North Beach	San Clemente	<del>4</del> <u>5</u>
San Clemente City Beach	San Clemente	9
<del>San Clemente State Beach</del>	<del>San Clemente</del>	<del>160</del>
		Total = <del>741</del> <u>778</u>

**Figure 1**  
**Relative Emissions from Various Heating Sources<sup>7</sup>**



<sup>7</sup> <http://www.epa.gov/airprog/oar/woodstoves/refp.html>

## SUMMARY OF PUBLIC PROCESS

In addition to the extensive control measure outreach efforts associated with the 2012 AQMP adopted in December of 2012, three Working Groups comprised of representatives of industry, agencies, environmental organizations and interested persons were convened beginning in November of 2012 to discuss key aspects of proposed amendments to Rules 445 and 444. The name of the various Working Groups and a list of meetings to date follows. Subsequent meetings will be held on an as needed basis.

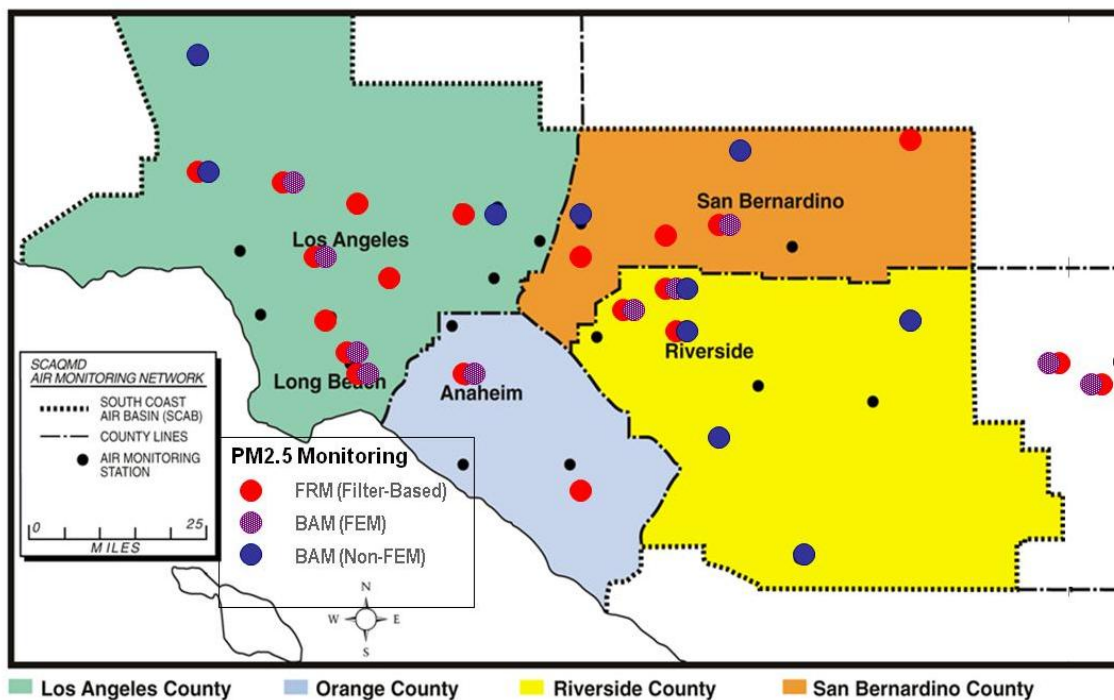
Rule (Source)	Meeting Dates	Members
PAR 445	January 24, 2013 March 6, 2013	General Public, Industry Representatives, Realtors, Firewood Sellers
PAR 444 – Wildland	November 30, 2012 February 7, 2013	Fire Protection Agencies, Prescribed Fire Agencies (U.S. Forest Service), State and County Representatives
PAR 444 – Agriculture	January 30, 2013	County Agricultural Commissioners, Resource Agencies, Agricultural Producers

A PAR 445/444 Public Workshop was held on February 13, 2013 and staff requested comments on the proposal no later than March 8, 2013. A Public Consultation Meeting was held on March 28, 2013 and comments were due by April 4, 2013.

## AIR QUALITY STANDARDS

The District monitors ambient air quality for criteria pollutants (ozone, carbon monoxide, particulate matter, nitrogen dioxide, sulfur dioxide, and lead) at 36 locations throughout the Basin. PM<sub>2.5</sub> is monitored at a subset of those monitoring stations (see Figure 2).

**Figure 2**  
**South Coast Air Quality Management District**  
**Ambient Air Monitoring Stations in 2011**



As of 2013, the Basin is not in attainment with the 24-hour or annual average National Ambient Air Quality Standard (NAAQS) for PM<sub>2.5</sub>. The following table presents a summary of the federal NAAQS and State of California air quality standards for particulate matter.

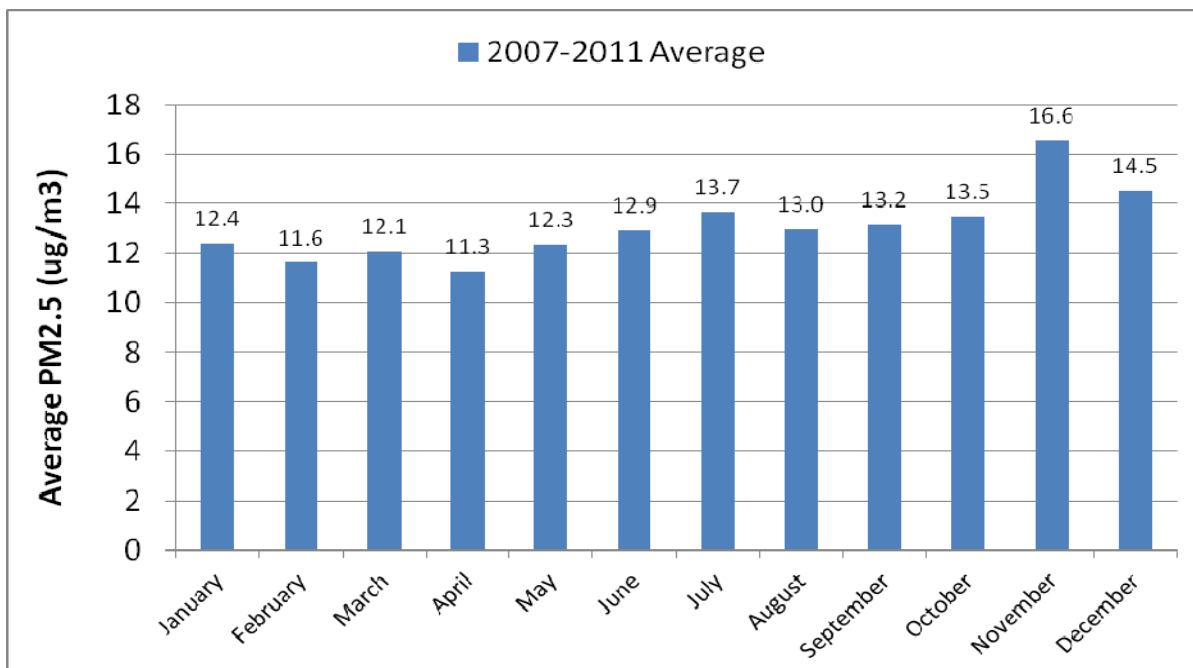
**Table 2**  
**Summary of Particulate Standards (µg/m<sup>3</sup>)**

Jurisdiction	PM10		PM2.5	
	Annual	24-Hour	Annual	24-Hour
Federal	--	150	12	35
California	20	50	12	--

### PM<sub>2.5</sub> AIR QUALITY IN THE SOUTH COAST AIR BASIN

PM<sub>2.5</sub> is monitored at various sites throughout the District. Unlike ozone that has a predictable summertime increase; ambient PM<sub>2.5</sub> measurements tend to be higher in the third and fourth quarters of the year. Figure 3 shows the Basin’s 2007 to 2011 average PM<sub>2.5</sub> concentrations on a monthly basis.

**Figure 3**  
**PM2.5 Seasonal Variation, 2007 to 2011**  
**Monthly Average Concentration in the Basin ( $\mu\text{g}/\text{m}^3$ )**



## HEALTH EFFECTS FROM FINE PARTICULATE MATTER

The following is an excerpt from Chapter 2, Air Quality and Health Effects, from the 2012 Air Quality Management Plan (page 2-13).

A significant body of peer-reviewed scientific research, including studies conducted in Southern California, points to adverse impacts of particulate matter air pollution on both increased illness (morbidity) and increased death rates (mortality). The 2009 U.S. EPA *Integrated Science Assessment for Particulate Matter* describes these health effects and discusses the state of the scientific knowledge (U.S EPA, 2009). A summary of health effects information and additional references can also be found in the 2012 AQMP, Appendix I.

There was considerable controversy and debate surrounding the review of particulate matter health effects and the consideration of ambient air quality standards when U.S. EPA promulgated the initial PM2.5 standards in 1997 (Vedel, 1997). Since that time, numerous additional studies have been published (Kaiser, 2005). In addition, some of the key studies supporting the 1997 standards were closely scrutinized and the analyses repeated and extended. These reanalyses confirmed the initial findings associating adverse health effects with PM2.5 exposures.

Several studies have found correlations between elevated ambient particulate matter levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks, and the number of hospital admissions in different parts of the United States and in various areas around the world. In recent years, studies have reported an association



between long-term exposure to PM<sub>2.5</sub> and increased mortality, reduction in life-span, and an increased mortality from lung cancer.

Daily fluctuations in PM<sub>2.5</sub> concentration levels have also been related to increased mortality due to cardiovascular or respiratory diseases, hospital admissions for acute respiratory conditions, school and kindergarten absences, a decrease in respiratory function in normal children, and increased medication use in children and adults with asthma. Long-term exposure to PM has been found to be associated with reduced lung function growth in children. The elderly, people with pre-existing respiratory and/or cardiovascular disease, and children appear to be more susceptible to the effects of PM<sub>10</sub> and PM<sub>2.5</sub>.

### **Health Effects from Wood Smoke**

Wood smoke is generally in the fine fraction of PM with most particles having an aerodynamic diameter of 2.5 microns or less. Wood smoke is primarily comprised of organic compounds (including polycyclic organic hydrocarbons), trace elements, and soot (elemental carbon). Wood smoke is usually released near ground level in populated areas and thus is especially likely to increase the PM<sub>2.5</sub> exposure of nearby residents. The health effects of household and neighborhood wood smoke have been studied extensively. The greatest health effect from wood smoke originates from the fine particles that can cause health problems ranging from minor irritations such as burning eyes and runny noses to chronic illnesses such as bronchitis. Fine particles also can aggravate chronic heart and lung diseases and are linked to premature deaths in people with these conditions. Persons that may be more susceptible to health effects from wood smoke include those with existing heart or lung disease (congestive heart failure, angina, chronic obstructive pulmonary disease, emphysema or asthma), the elderly, and the young.<sup>8</sup>

A literature search of available studies (Boman, et al, 2003) also recently concluded that there is no reason to assume that the effects of particulate matter in areas polluted with higher levels of wood smoke are weaker than elsewhere [e.g., areas with similar ambient PM concentrations but with less wood smoke]. Conclusions in a more recent health effects study included a statement that there is no persuasive evidence that wood smoke particles are significantly less dangerous for respiratory disease than other major categories of combustion-derived particles in the same size range (Naeher, et al, 2007). The same study did acknowledge, however, that there is too little evidence available to make a judgment concerning the relative toxicity of wood smoke particles with respect to cardiovascular or cancer outcomes.

A review of all-cause cardiovascular and respiratory mortality data was also recently completed in Australia after a 2001 wood smoke reduction program resulted in a 40 percent improvement in wintertime particulate pollution (British Medical Journal, 2013). The study found that decreased air pollution from ambient biomass smoke was associated with reduced annual mortality in males and with reduced cardiovascular and respiratory mortality during the winter months.

Smoke particles are a significant source of ambient levels of particulate matter in the area. On an annual average basis, about 1 to 3% of PM<sub>2.5</sub> is made up of particles from wood or biomass combustion in the South Coast Air Basin (SCAQMD, 2008). During winter months biomass burning contributions have been found to range on average from 1 to nearly 4 µg/m<sup>3</sup> (Manchester-Neesvig, 2003).

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<sup>8</sup> US EPA Fact Sheet, Health Effects of Wood Smoke, <http://www.epa.gov/woodstoves/healtheffects.html>

In October 2003, a series of large wildfires occurred in Southern California, with plumes of smoke covering a large area for several days. This afforded an opportunity to assess the effects of biomass burning emissions over a large population. In the University of Southern California Children's Health Study, it was found that respiratory symptoms such as eye, nose and throat irritation, cough, bronchitis, wheezing, and asthma attacks, were associated with individually reported smoke exposures. Medication usage and physician visits were also reported to have increased. Risks for these effects increased with the number of reported smoky days. (Kunzli, 2006).

In another report, the relationship of hospital admissions and particulate exposures during smoky days during the October 2003 fires was examined. Associations of respiratory admissions with particulate exposures during the fires were higher than before or after the fires. The strongest associations were noted among those over 65 years of age, and those 1-4 years of age. (Delfino, 2009).

### **Fireplace Wood Smoke Toxic Emissions**

The following is an excerpt from U.S. EPA AP-42 regarding toxicity of wood smoke emissions from fireplaces (U.S. EPA, 1996).

Hazardous air pollutants (HAPs) are a minor, but potentially important, component of wood smoke. A group of HAPs known as polycyclic organic matter (POM) includes potential carcinogens such as benzo(a)pyrene (BaP). POM results from the combination of free radical species formed in the flame zone, primarily as a consequence of incomplete combustion. Under reducing conditions, radical chain propagation is enhanced, allowing the buildup of complex organic material such as POM. The POM is generally found in or on smoke particles, although some sublimation into the vapor phase is probable.

These findings are further supported in a 2007 publication in *Inhalation Toxicology* entitled "Wood Smoke Health Effects: A Review" (*Inhalation Toxicology*, 19:67-106, 2007).

Due to the potential health effects of wood smoke, just as with cigarette smoke, packaging of firewood and other wood-based products (e.g., manufactured firelogs) requires a Prop. 65 notice of potential health hazard.

## **PURPOSE AND APPLICABILITY**

The purpose of these rule amendments would be to seek further PM emissions reductions from residential wood burning and open burning sources on episodic days within the South Coast Air Basin. Figure 4 shows the Basin boundaries in relation to other jurisdictions in Southern California. PAR 445 would impact the general public that burns wood, people that sell and install wood-burning devices, and commercial firewood facilities that sell wood-based fuel for use in hearth devices. PAR 444 would impact resource agencies involved in prescribed burns and agricultural operations that use open burning. Effective January 1, 2015, the amendments to Rule 444 would also create a new prohibition for beach burning activities by the general public to protect public health by reducing exposure of potentially high concentrations of wood smoke, although a city or county could expedite that date.

**Figure 4**  
**South Coast Air Basin Boundaries**



## LEGAL AUTHORITY

The AQMD obtains authority to adopt, amend, or repeal rules and regulations from Health and Safety Code Sections 39002, 40000, 40001, 40702 and 40725 - 40728.

## SUMMARY OF PROPOSED RULE 445 AMENDMENTS

### Subdivision (b) – Applicability

The text describing a commercial firewood seller has been amended to include wood or “other wood-based fuels” to ensure commercial enterprises that sell manufactured logs or pellet fuels would be subject to the labeling requirements in Paragraph (d)(5).

### Subdivision (c) - Definitions

The definition for a commercial firewood seller is proposed to be amended as follows to ensure that the proposed labeling requirements in paragraph (d)(5) would apply to all packaged wood and manufactured wax/sawdust logs sold at all store types.

- (1) COMMERCIAL WOOD-BASED FUEL SELLER FIREWOOD FACILITY means any operation that has a business license that sells, or offers for sale, or supplies, packaged, bundled or bulk firewood, manufactured firelogs, or wood pellets.

The definition for a cookstove is proposed to be amended as follows to clarify the specific device characteristics. As described below under the Exemptions heading [Subdivision (f)] an amendment to paragraph (f)(1) is also proposed to clarify that the cookstove exemption is only applicable to commercial cooking.

- (2) COOKSTOVE means any wood or wood-based fuel-fired device that is designed and used primarily for cooking food and has the following characteristics as defined in Title 40 of the Code of Federal Regulations Section 60.531, February 28, 1988, or any subsequent revision ed:
- (A) An oven, with a volume of 0.028 cubic meters (1 cubic foot) or greater, and an oven rack;
  - (B) A device for measuring oven temperatures;
  - (C) A flame path that is routed around the oven;
  - (D) A shaker grate;
  - (E) An ash pan;
  - (F) An ash clean-out door below the oven; and
  - (G) The absence of a fan or heat channels to dissipate heat from the appliance.

In conjunction with the amendments to the mandatory winter burning curtailment provisions in subdivision (e), definition (c)(6) is proposed to be amended as follows to lower the current forecast threshold from 35 to 30  $\mu\text{g}/\text{m}^3$ , and to outline the parameters when a mandatory curtailment would be applicable to the entire Basin below an elevation of 3,000 feet.

- (6) MANDATORY WINTER WOOD BURNING CURTAILMENT DAY means
- (A) Means any calendar day or consecutive calendar days during the wood burning season so declared to the public by the Executive Officer when ambient levels of particulate matter of 2.5 microns in size or less (PM2.5) is forecast to exceed 30  $\mu\text{g}/\text{m}^3$  for a specific source/receptor area.
  - (B) Applies to the entire South Coast Air Basin whenever a PM2.5 level of greater than 30  $\mu\text{g}/\text{m}^3$  is predicted for a source receptor area containing a monitoring station that has recorded a violation of the federal 24-hour PM2.5 National Ambient Air Quality Standard for either of the two previous three-year design value periods. The design value is the three-year average of the annual 98<sup>th</sup> percentile of the 24-hour values of monitored ambient PM2.5 data.

A new definition is proposed for wood-based fuel to ensure consistency with other portions of the proposed amendments.

- (18) WOOD-BASED FUEL means any wood, wood-based product, or non-gaseous or non-liquid fuel, including but not limited to manufactured firelogs, wood or pellet products. For the purpose of this rule, charcoal is not considered a wood-based fuel.

As described below under the Exemptions heading [Subdivision (f)] a new exemption [paragraph (f)(6)] has also been added to ensure that the proposed paragraph (d)(5) labeling requirements do not apply to wood-based fuel that is intended for cooking food since such products are less widely used and represent an unnecessary cost to the packaging industry.

The definition for a wood-burning device is proposed to be amended to include open or enclosed devices. The result of this change would prohibit the permanent installation of a wood-burning fire pit on residential properties under the provisions of subdivision (d).

(19 18) WOOD-BURNING DEVICE means any fireplace, wood-burning heater, or pellet fueled wood heater, or any similarly open or enclosed, permanently installed, indoor or outdoor device burning any wood-based fuel for aesthetic or space-heating purposes, which has a heat input of less than one million British thermal units per hour (Btu/hr).

A new definition is proposed for a wood-fired cooking device to clarify applicability under a mandatory winter burning curtailment.

(22) WOOD-FIRED COOKING DEVICE means any cookstove, wood-fired oven or grill, or any device designed for burning any wood-based fuel for cooking purposes.

### **Subdivision (d) – Requirements**

#### **Subparagraph (d)(2)(D) – Equivalency Determinations for Fireplaces**

The current rule allows the installation of a wood-burning device or fireplace into an existing development if it can be demonstrated that the device achieves an emissions rate that is at least as clean as an EPA certified wood heater (e.g., stove or insert). This provision is proposed to be removed because the test methods for wood heaters (stoves or inserts) and fireplaces are different and are therefore non-comparable. Additionally, the March 2008 Rule 445 AQMD Governing Board adoption resolution directed staff to consider devices developed under the U.S EPA Voluntary Low Emissions (Phase 2 Qualified) Fireplace program to be acceptable for installation in new developments only if determined to be as low emitting as a gaseous-fueled device (AQMD, 2008). As previously mentioned, U.S. EPA Phase 2 Qualified Fireplace Retrofit Devices can be installed into existing (installed before March 9, 2009).wood-burning fireplaces under current Rule 445 provisions.

#### **Paragraph (d)(5) – Commercial Firewood Sellers**

A new requirement is proposed that would require commercial firewood sellers to attach a label to wood-based fuel products for sale to inform the public of the AQMD Check Before You Burn program. Under PAR 445, the effective date of this requirement to include the text below on the wood-based fuel product sales would be six months after adoption of the amendments.

<p><u>Use of this and other solid fuel products may be restricted at times by law. Please check (Toll-Free Number) or (Web Address) before burning.</u></p>
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Similar labeling provisions are already in place in the Bay Area. The toll free number (1-877-4NO-BURN) and website ([www.8774NOBURN.ORG](http://www.8774NOBURN.ORG)) used by Bay Area AQMD presently have links to the South Coast AQMD Check Before You Burn program. AQMD staff has committed, to the extent feasible, to incorporate the same labeling requirements as

other California air districts in an attempt to lessen the regulatory burden on impacted industries. Paragraph (d)(5) also allows the use of alternative labeling text subject to Executive Officer approval and establishes sell through provisions that would allow commercial firewood sellers to continue to sell already packaged firewood for up to two years after the labeling requirements implementation date (six months after rule adoption).

### **Subdivision (e) – Mandatory Winter Burning Curtailment Program**

The existing provisions related to the mandatory winter burning curtailment program have been modified to reflect that future curtailments would apply to specific source receptor areas or to the entire Basin if the forecast threshold is exceeded in a source receptor area that contains a monitoring station that has recorded a violation of the federal PM<sub>2.5</sub> 24-hour standard during either of the two previous three-year design value days. These requirements would continue to apply to any permanent indoor/outdoor or portable outdoor wood-burning device, but the proposed amendments also clarify the inclusion of wood-fired cooking devices on residential properties.

### **Subdivision (f) – Exemptions**

The existing exemption for cookstoves is proposed to be amended as follows.

- (1) The provisions of this rule shall not apply to cookstoves designed and used for commercial purposes.

A new exemption is proposed in paragraph (f)(6) to clarify that the proposed amended rule's labeling requirements do not apply to wood-based fuels intended for cooking food since such products are less widely used and represent an unnecessary cost to the packaging industry.

- (6) The provisions of (d)(5) shall not apply to wood-based fuel intended for the cooking, smoking, or flavoring of food.

## **SUMMARY OF PROPOSED RULE 444 AMENDMENTS**

As mentioned above, Rule 444 presently includes a system where forecasts are made for No Burn Days, Marginal Burn Days, and Permissive Burn Days. PAR 444 would add a new definition for a Mandatory Winter Burning Curtailment that is consistent with the forecast procedures specified by AQMD Rule 445. PAR 444 also amends the definitions for Marginal and Permissive Burn Days to prohibit burning during a Mandatory Winter Burning Curtailment in areas below an elevation of 3,000 feet. A new definition is also included in PAR 444 for Product Testing that would clarify an exemption proposed for commercial companies that evaluate products designed to detect the presence of flame or smoke, or products intended to prevent equipment damage due to flame. No changes are proposed for open burning activities conducted on properties above an elevation of 3,000 feet.

A new definition is added for “beach burning” which is prohibited beginning January 1, 2015 under this amendment. However, using charcoal and liquid/gaseous fuels ~~for cooking~~ at beaches is still permitted. Other types of recreational, ceremonial, or open burning remain exempt, such as those at regional parks and camp grounds not covered by the new definition. However, the exemption change will prohibit the burning of trash and other materials as listed in paragraph (d)(3) for those activities that are allowed to continue. Under PAR 444 a

city or county could, though formal action, make the prohibition effective sooner than January 1, 2015.

## EMISSIONS INVENTORY

Emissions from biomass burning result primarily from incomplete combustion and include PM, CO, NO<sub>x</sub>, SO<sub>x</sub>, and VOC, although particulate emissions have been the primary focus of air district smoke reduction programs. Studies have shown that the particulate emissions from these sources are generally in the fine ( $\leq 2.5$  microns) size range (Jacob, et.al., 2000). Additionally, incomplete combustion of biomass and firewood produces polycyclic organic matter, a group of compounds classified as hazardous air pollutants under Title III of the federal Clean Air Act.

### Rule 445

Table 3 shows 2012 AQMP winter day residential wood burning emissions inventory for the base year (2008) and future years.

**Table 3**  
**Average PM<sub>2.5</sub> Winter Day Emissions from Residential Wood Combustion (tons/day)**

Emissions (Tons/Day)	2008	2014	2019
Average Winter Day:	10.6	9.4	9.4

### Rule 444

Table 4 shows 2012 AQMP annual average PM<sub>2.5</sub> emissions inventory for open burning sources.

**Table 4**  
**Annual Average PM<sub>2.5</sub> Emissions from Open Burning Sources (tons/day)**

Emissions (Tons/Day)	2008	2014	2019
Annual Average Day:	4.6	4.6	4.6

Note: The emissions inventory does not include emissions from beach burning activities due to large uncertainties in the amount of activity.

## EMISSION REDUCTIONS

### Rule 445

Based on historical data from 2009 to 2011, it is estimated that decreasing the existing Rule 445 curtailment threshold from 35 to 30  $\mu\text{g}/\text{m}^3$  could result in an approximate 50% increase in the number of no-burn days (approximately 20 days total) during the November through February winter season. Lowering the mandatory winter burning curtailment threshold and applying the curtailment to the entire Basin when triggered could potentially reduce Basin-

wide ambient PM<sub>2.5</sub> concentrations on these episodic no-burn days by about 7.1 tons per winter day (assuming 75% rule effectiveness). It should be noted that while controlling emissions from residential wood burning is primarily intended to reduce PM<sub>2.5</sub> emissions, there is an added benefit of also reducing emissions of CO, VOC, NO<sub>x</sub>, SO<sub>x</sub>, and hazardous air pollutants.

#### **Rule 444**

Enhancing the open burning restrictions with this revised threshold criteria and applying a curtailment to the entire Basin could potentially reduce Basin-wide ambient PM<sub>2.5</sub> concentrations on episodic no-burn days by about 4.6 tons per winter day. However, since the burning would likely be shifted to other days, the total annual emissions would remain the same. Accordingly, no annual emissions reductions are anticipated under PAR 444, but emissions reductions would be expected to be achieved on individual days where high PM<sub>2.5</sub> levels are forecast, thus reducing public health impacts. Relative to beach burning, as noted in Table 4, the emissions inventory does not include beach burning. Quantification of these emissions and the anticipated reductions are difficult to determine as the amount of wood use varies widely. However, assuming a wood burning rate of two to three bundles of packaged wood per fire ring per night in the summer months and assuming full utilization of all beach fire rings in the Basin, ~~the approximately as many as 857~~ 840 Basin fire rings are estimated to potentially emit up to 0.16 to 0.25 ton per day of direct PM<sub>2.5</sub> at full utilization. The change in the estimated number of beach fire rings is based a field survey of beach fire rings that are subject to PAR 444 provisions. In addition to these reductions, the prohibition on beach fires is expected to result in significant PM<sub>2.5</sub> exposure reductions for those in close proximity to the fires, such as beach goers and nearby residents.

## **COST EFFECTIVENESS**

The cost effectiveness of these proposed rule amendments has not been determined. Increasing the number of Rule 445 curtailment days would result in relatively little cost increases to the impacted community as there are cost-effective alternatives to burning wood such as gaseous-fueled or electrical heating appliances. Additionally, the proposed amendments do not change existing mandatory curtailment exemptions provided for low income households or those not serviced by natural gas. Costs to firewood sellers are also expected to be low as some already label products to comply with other California air district regulations and sell through provisions have been added to PAR 445. Moreover, AQMD staff has committed, to the extent feasible, to develop PAR 445 labeling requirements consistent with those required by other California air districts. Cost impacts for an increase in Rule 444 burn restrictions are also estimated to be low because it is believed that the open burning will be shifted to other, permissive burn days. Revenue impacts could occur to beach communities with fire rings that charge for parking.

## **CALIFORNIA ENVIRONMENTAL QUALITY ACT**

SCAQMD staff has reviewed the proposed project and determined that the PARs 444 and 445 are exempt from CEQA pursuant to CEQA Guidelines §15308 – Actions by Regulatory Agencies for the Protection of the Environment. The proposed project would reduce air pollution and toxic risk; and not generate ~~secondary~~ significant ~~incremental~~ adverse



environmental impacts. A Notice of Exemption will be prepared pursuant to CEQA Guidelines §15063 – Notice of Exemption, and filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties immediately following the adoption of the proposed project.

## **SOCIOECONOMIC ASSESSMENT**

The proposed amendments to Rule 445 would lower from 35 to 30  $\mu\text{g}/\text{m}^3$  the  $\text{PM}_{2.5}$  threshold that is used to declare a mandatory winter burning curtailment. The South Coast Basin residents are required to curtail burning wood whenever a  $\text{PM}_{2.5}$  level of greater than 30  $\mu\text{g}/\text{m}^3$  is forecasted for a monitoring station not yet attaining the federal 24-hour  $\text{PM}_{2.5}$  standard. The proposed amendments would also require commercial facilities that sell firewood or other wood-based fuel to notify the public of the AQMD's Check Before You Burn program through a labeling program.

The proposed amendments to Rule 444 would limit open burning whenever a mandatory winter burning curtailment under Rule 445 is called for. In addition, the proposal would prohibit open burning at beaches effective January 1, 2015.

### **Affected Industries**

The proposed amendments would affect commercial firewood sellers and the general public who use wood burning fireplaces and other wood burning devices (including fire rings on beaches). Commercial firewood sellers belong to the industry of fuel dealers [North American Industrial Classification System (NAICS) 45431]. Based on a District survey, there are about 86 commercial firewood sellers in the Basin, out of which 31 are located in Los Angeles County, 24 in Orange County, 16 in Riverside County, and the remaining 15 in San Bernardino County. The District's survey did not include firewood sold at grocery stores.

### **Compliance Cost**

The proposed amendments would increase the number of no-burn days in the Basin and could potentially result in the loss of sales by the affected firewood sellers. However, the increase in number of no-burn days is expected to be very small (10 to 15 days) and is anticipated to decrease as  $\text{PM}_{2.5}$  air quality improves and the Basin meets the federal 24-hour  $\text{PM}_{2.5}$  standard (expected in 2014). As a result, the cost impacts of curtailment on firewood sellers are expected to be minimal.

Currently the majority of packaged firewood sellers use labels to notify the public of complying with the Bay Area AQMD's regulation on burning curtailment and, therefore, should be able to comply with the labeling requirement of the SCAQMD's Proposed Amended Rule 445 (PAR 445) without significant costs. Additionally, a two year sell through provision has been added to allow packaged wood sellers to continue to sell materials that have already been packaged prior to the adoption of PAR 445 requirements.

Bulk firewood sellers are expected to incur a minimal cost of preparing a one-page outreach flyer with the SCAQMD's Check Before You Burn statement. SCAQMD staff will prepare a sample material for the one-page flyer to reduce development costs for bulk firewood sellers.

Cost impacts to the general public are also expected to be minimal as wood burning in the SCAQMD is done mainly for aesthetic purposes and there are cost-effective alternatives to

burn wood for heating. The general public could also use incentives provided by the SCAQMD and switch to cleaner burning alternatives to wood burning fireplaces such as gaseous-fueled devices.

The prohibition of beach burning may result in loss of revenues to the cities and entities which charge for parking in areas where beach fires are conducted. State parks and local businesses could also lose revenues due to reductions in number of visitors. Beach cities and local municipalities would lose sales tax revenues associated with the beach fire activities. According to the estimates provided by the Orange Coast District of State Parks Department and the City of Huntington Beach, each affected local beach jurisdiction could lose up to \$1 million annually in revenue due to the prohibition of beach burning.<sup>9</sup>

### **Rule Adoption Relative to the Cost-Effectiveness Schedule**

On October 14, 1994, the Governing Board adopted a resolution that requires staff to address whether proposed rules being considered for adoption are in ranking order of cost-effectiveness in the Air Quality Management Plan (AQMP). PAR 445 implements Control Measure BCM-01 (Further Reductions from Residential Wood Burning Devices) and PAR 444 implements Control Measure BCM-02 (Further Reductions from Open Burning) from the 2012 AQMP. BCM-01 and BCM-02 are the only two measures with emission reductions to attain the federal standard and provide excess reductions as contingency measures if needed. The cost-effectiveness of these control measures was not assessed in the 2012 AQMP, and thus the ranking order of cost-effectiveness is not applicable here. The prohibition of beach fire ring wood burning was added at a later stage and is primarily intended for localized health protection.

## **POST RULE ADOPTION PUBLIC OUTREACH EFFORTS**

### **PAR 445**

The ongoing education/outreach effort will continue as part of the Healthy Hearth™ program (<http://www.aqmd.gov/healthyhearths/index.htm>) since the proposal affects the general public and will likely result in an increase in the number of households subject to no-burn days. This is especially true given the fact that the no-burn days may apply to the entire Basin under the proposed amendments, whereas previously only specific source receptor areas were subject to the no-burn day forecasts. In recent years new efforts have been developed to inform the public of mandatory curtailment days including a dedicated toll-free phone line (866.966.3293) and list serve (<http://aqmd.enviroflash.info/>) by which e-mails are sent to subscribers when a no-burn day is forecast for their particular area.

Additional public education/outreach information on the Healthy Hearths™ website includes videos, answers to frequently asked questions, links to other web sites (CARB and U.S. EPA), and a description of health effects of wood smoke. Efforts to increase public awareness of the District's wood smoke reduction program may include, but are not limited to, outreach to local governments, interested organizations, and homeowner associations.

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<sup>9</sup> (Retrieved from <http://www.coronadeltoday.com/34939/home/huntington-beach-officials-say-fire-ring-ban-could-cost-that-city-1-million/> and [http://www.google.com/#hl=en&q=California+State+Park+opposing+removal+of+Fire+rings&oq=California+State+Park+opposing+removal+of+Fire+rings&gs\\_l=serp.3...14500.23844.0.24703.29.29.0.0.0.125.2549.22j7.29.0...0.0...1c.1.8.serp.HYTdXtt0Ut0&bav=on.2.or.&fp=e46c04486c441ada&biw=1024&bih=644](http://www.google.com/#hl=en&q=California+State+Park+opposing+removal+of+Fire+rings&oq=California+State+Park+opposing+removal+of+Fire+rings&gs_l=serp.3...14500.23844.0.24703.29.29.0.0.0.125.2549.22j7.29.0...0.0...1c.1.8.serp.HYTdXtt0Ut0&bav=on.2.or.&fp=e46c04486c441ada&biw=1024&bih=644)).

The District has also recently partnered with local media outlets to help inform the public of the Check Before You Burn program and local air quality. Appendix B has a list of answers to Frequently Asked Questions (FAQs) and the underlined text has been proposed to further clarify the types of devices that can be installed into existing households. Changes to the list of FAQs may be made in the future to help answer implementation questions.

District staff will develop and distribute information to those affected by the subparagraph (d)(5) labeling requirements immediately after Rule adoption. As mentioned, sell through provisions have been added that would allow those entities two years after the implementation date of the labeling requirements to sell previously packaged product. Additionally, some of the larger commercial firewood facilities may already be subject to labeling requirements in other parts of the State. In fact, some packaged products sold locally currently have labels that are required by other California air districts.

#### **PAR 444**

Activities subject to existing Rule 444 requirements for agricultural burning and prescribed burns presently check AQMD burn forecasts through the AQMD web site or through the AQMD's toll free number [(800) CUT-SMOG]. Those mechanisms will be updated subsequent to adoption of PAR 444. Additional outreach efforts will be implemented to work with jurisdictions responsible for public beach areas regarding the new PAR 444 restrictions. A Request for Proposals (RFP) is also under consideration to hire a contractor(s) to conduct a demonstration project for a low emission outdoor open burning beach type fire pit ring.

## **FINDINGS UNDER THE HEALTHY AND SAFETY CODE**

Health and Safety Code Section 40727 requires the AQMD to adopt written findings of necessity, authority, clarity, consistency, non-duplication and reference.

#### **Necessity**

A need exists to adopt PAR 445 and 444 to implement the 2012 AQMP control measures BCM-01 and BCM-02 in order to assist in the attainment of State and federal PM standards for the South Coast Air Basin, in particular the federal 24-hour PM<sub>2.5</sub> standard. A need also exists to adopt PAR 445 and 444 to further protect the public from harmful exposure to wood smoke ~~and discomfort or damage to property.~~

#### **Authority**

The AQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from California Health & Safety Code Sections 39002, 40000, 40001, 40702, and 40725 through 40728, inclusive and 41700.

#### **Clarity**

The proposed amended rules have been written or displayed so that their meaning can be easily understood by persons directly affected by them.

#### **Consistency**

The proposed amended rules are in harmony with and not in conflict with or contrary to, existing statutes, court decisions or state or federal regulations.

### **Non-Duplication**

The proposed amended rules do not impose the same requirements as any state or federal regulations. The amendments are necessary and proper to execute the powers and duties granted to, and imposed upon, AQMD.

### **Reference**

By adopting the proposed rule amendments, the AQMD Governing Board will be implementing, interpreting, and making specific the provisions of the California Health & Safety Code Section 40001 (rules to achieve ambient air quality standards), 40440 (rules to carry out the Air Quality Management Plan) and 41700 (prohibition of nuisance).

**Alternative Control Measures** - Health and Safety Code Section 40440.5, subsection (c)(3) requires an analysis of alternative control measures. One alternative is to not adopt the proposed rule amendments; however, the emission reductions are necessary as part of the AQMD's proposal to meet State and federal air quality standards, in particular the federal 24-hour PM<sub>2.5</sub> standard, and are necessary to further protect public health. A possible PAR 444 alternative would be for the beach burning prohibition to become effective immediately upon adoption.

**Incremental Cost-Effectiveness** – Health and Safety Code Section 40920.6 (a)(3) requires the District to perform an incremental cost effectiveness analysis prior to adopting rules to meet the requirements for a Best Available Retrofit Control Technology (BARCT) rule, or to implement feasible measures pursuant to use of an alternative emission reduction strategy under Health and Safety Code Section 40914 which does not apply to particulate matter. PAR 445/444 is not being adopted to meet a BARCT requirement nor is it being adopted as a feasible measure pursuant to an alternative reduction strategy under Health and Safety Code Section 40914. Therefore, an incremental cost-effectiveness analysis is not needed.

**Comparative Analysis** - Health and Safety Code §40727.2 requires a written analysis comparing the proposed rule with existing federal, State and District regulations. Health and Safety Code §40727.2, subsection (c) and (d) further require the analysis to review averaging provisions, operating parameters, work practice requirements, and monitoring, reporting and recordkeeping requirements associated with existing applicable rules and proposed regulations.

As mentioned, the U.S. EPA has previously adopted performance standards for new wood heaters (wood stoves and fireplace inserts) sold since 1992.<sup>10</sup> PAR 445 is consistent with these requirements as wood burning units that meet the U.S. EPA performance standards would be allowed to be installed and operated in remodels. PAR 445 is also complementary to the federal program as it also prohibits the sale of used wood burning heaters that do not meet U.S. EPA performance standards. In addition, Rule 445 is consistent with EPA guidance regarding the use of proper fuels, such as seasoned wood of less than 20 percent moisture content. PAR 444 is consistent with federal guidance documents on open burning and efforts to improve visibility. Table 5 below identifies other State and AQMD rules that apply to the sources subject to PAR 445/444. Footnotes explain the differences between Proposed Amended Rules 445/444 and the other State and AQMD rules where relevant.

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<sup>10</sup> 4.1 grams PM per hour for catalytic heaters and 7.5 grams per hour for non-catalytic heaters

## **CONCLUSIONS AND RECOMMENDATIONS**

The Basin is not in attainment with State and federal annual average and 24-hour air quality standards for PM<sub>2.5</sub>. The 2012 AQMP, approved by the AQMD Governing Board on December 7, 2012 and the CARB Board on January 25, 2013, included control measures to reduce fine particulate emissions from wood burning devices and open burning sources that will result in attainment of the federal 24-hour PM<sub>2.5</sub> standard. As part of the adoption resolution, the CARB Board directed that the relevant portions of the 2012 AQMP be submitted to U.S. EPA as a SIP revision to meet federal Clean Air Act requirements. Accordingly, AQMD staff recommends adoption of PAR 445 and 444 as part of an effort to protect public health during air quality episodes and as part of a comprehensive effort to attain State and federal air quality standards.

The prohibition of beach burning activities, excluding charcoal or gaseous/liquid fuels will protect public health by reducing exposure of potentially high concentrations of wood smoke for beach goers and the surrounding communities.

The existing gas log incentive program is anticipated to continue in the near-term and would be extended as additional funds can be identified. Efforts to develop a wood stove change out program for U.S. EPA certified wood stoves are currently being explored and will be implemented to the extent that additional funding can be secured. As part of or in addition to the wood stove change out program, AQMD staff will be proposing additional incentives for other wood burning alternatives or cleaner technologies for households not subject to wood burning restrictions (e.g., mountain communities, low income, no natural gas service, etc.). AQMD staff is also considering implementation of a voucher program that would allow the public additional options for choosing low emission hearth devices. A companion proposal will go before the AQMD Governing Board for its consideration.

**Table 5  
Comparison of PAR 445/444 and Other AQMD Rules**

<b>Rule</b>	<b>Source</b>	<b>Emission Reductions / Limits (footnotes provide comparison with PAR 445/444 requirements)</b>	<b>Averaging Procedures, Work Practices, Operating Provisions</b>	<b>Monitoring, Recordkeeping, Reporting, Test Methods</b>
State H&S Code 41701	Applicable to any source.	Prohibits discharge of excessive visible emissions. <sup>11</sup>	40 percent opacity cannot be exceeded three minutes in any hour, cumulatively.	Test methods - based on opacity as determined by Ringlemann chart or U.S. EPA Method 9.
AQMD 401 (Visible Emissions)	Any single source of emissions; would include exhaust stack emissions.	Prohibits excess visible emissions. <sup>12</sup>	20 percent opacity cannot be exceeded three minutes in any hour, cumulatively.	Test methods -based on opacity as determined by Ringlemann chart or U.S. EPA Method 9.
AQMD 402 (Nuisance)/Health & Safety Code Section 41700	Applicable to any source.	Prohibits public nuisance caused by emissions of air contaminants. <sup>13</sup>	None.	None specified.
AQMD 404 (Particulate Matter – Concentration)	Applicable to any source.	Prohibits discharge of particulate matter in excess of certain rates. <sup>14</sup>	Based on grains per cubic foot of air stream.	None specified.
AQMD 405 (Solid Particulate Matter – Weight)	Applicable to any source.	Prohibits discharge of particulate matter weight in excess of specified rates. <sup>15</sup>	Establishes maximum discharge rate (lbs/hr) based on weight per hr.	None specified.

## REFERENCES

Boman, Christopher, et al., Adverse Health Effects from Ambient Air Pollution in Relation to Residential Wood Combustion in Modern Society, Scandinavian Journal of Work and Environmental Health, 2003, Volume 29, pages 251-260.

<sup>11</sup> Health and Safety Code § 41701 provisions are implemented primarily in response to public complaints. PAR 445/444 requirements are applicable regardless of whether public complaints are filed.

<sup>12</sup> Rule 401 requirements are based in response to public complaints and visual observations. PAR 445/444 requirements are applicable regardless of whether public complaints are filed.

<sup>13</sup> Rule 402 provisions are implemented primarily in response to public complaints. PAR 445/444 requirements are applicable regardless of whether public complaints are filed.

<sup>14</sup> This Rule is used in conjunction with the AQMD’s permitting system for point sources of air pollution. Wood burning sources are not subject to AQMD permits. Area sources, such as PAR 444 open burning operations are subject to a separate permitting program.

<sup>15</sup> Under Rule 405, point source emissions are addressed through the permit evaluation process. PAR 445 sources are not subject to the AQMD’s permitting system. Area sources, such as PAR 444 open burning operations are subject to a separate permitting program.

British Medical Journal, Evaluation of Interventions to Reduce Air Pollution from Biomass Smoke on Mortality in Launceston, Australian: Retrospective Analysis of Daily Mortality, 1994-2007, 2013, edition 8446.

CARB (California Air Resources Board), Area Source Methodology, Section 7.1, Residential Wood Combustion, July 1997.

Delfino, Ralph J, Sean Brummel, Jun Wu, Hal Stern, Bart Ostro, Michael Lipsett, Arthur Winer, Donald H Street, Lixia Zhang, Thomas Tjoa and Daniel L Gillen. The relationship of respiratory and cardiovascular wildfires of 2003 hospital admissions to the southern California. *Occup. Environ. Med.* 66:189-197, 2009.

Houck, James E., and Eagle, Brian E. Technical Memorandum 4 (Final Report) Control Analysis and Documentation for Residential Wood Combustion in the MANE-VU Region. Prepared for the Mid-Atlantic Regional Air Management Association. October 5, 2006.

Jacob, D., et al, Fine Particle and Gaseous Emissions Rates from Residential Wood Combustion, *Environmental Science and Technology*, 2000. Volume 34, Pages 2080-2091.

Kaiser, J. Mounting Evidence Indicts Fine-Particle Pollution. *Science*, 307:1858-1861, 2005.

Kunzli, Nino, Ed Avol, Jun Wu, W. James Gauderman, Ed Rappaport, Joshua Millstein, Jonathan Bennion, Rob McConnell, Frank D. Gilliland, Kiros Berhane, Fred Lurmann, Arthur Winer, and John M. Peters. Health Effects of the 2003 Southern California Wildfires on Children. *Am J Respir Crit Care Med* Vol 174. pp 1221–1228, 2006

Manchester-Neesvig, Jon B., James J. Schauer, Glen R. Cass. The Distribution of Particle-Phase Organic Compounds in the Atmosphere and Their Used for Source Apportionment during the Southern California Children’s Health Study. *J. Air & Waste Management Assoc.* 53: 1065-1079.

Naeher, Luke, et al, Woodsmoke Health Effects: A Review, *Inhalation Toxicology*, 19:67-106, 2007.

South Coast Air Quality Management District, 2012 Air Quality Management Plan (AQMP), December 2012.

South Coast Air Quality Management District Governing Board Adoption Resolution for Proposed Rule 445, March 2008. <http://www.aqmd.gov/hb/2008/March/080337a.html>.

South Coast Air Quality Management District, Draft Final Staff Report Rule 445 (Wood-Burning Devices), March 2008.

South Coast Air Quality Management District, 2007 Air Quality Management Plan (AQMP), June 2007.

SCAQMD. Multiple Air Toxics Exposure Study in the South Coast Air Basin. MATES III. South Coast Air Quality Management District, 2008.

U.S. EPA. Integrated Science Assessment for Particulate Matter (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-08/139F, 2009.

U.S. EPA, AP-42, Section 1.9, Residential Fireplaces, October 1996.

U.S. EPA Fact Sheet, Health Effects of Wood Smoke, <http://www.epa.gov/woodstoves/healtheffects.html>

U.S. EPA, Compilation of Emission Factors, AP-42, Section 1.9 Residential Fireplaces.  
Vedal, S. Critical Review. Ambient Particles and Health: Lines that Divide. JAMA,  
47(5):551-581, 1997



## Appendix A Public Comments and Responses

### U.S. EPA/CARB COMMENTS AND RESPONSES

The following comments were received from the U.S. EPA, Region IX and are followed by AQMD staff responses.

Comment 1: New draft paragraph (f)(2) exempts property zoned for commercial uses. Would this language inadvertently exempt residential property within an area that is zoned for mixed-use of both residential and commercial?

*Staff Response:* After further internal discussions the proposed exemption has been removed and the existing cookstove exemption in paragraph (f)(1) has been modified to apply to “wood-fired cooking devices designed and used for commercial purposes.”

Comment 2: Existing section (h) establishes penalties for violations of the rule. While it is understood why it might be desirable to publicly clarify such guidelines, they are not appropriate to include in the State Implementation Plan. Please remove these provisions from any rule versions submitted to EPA for inclusion in the SIP. Other California Districts (e.g., Bay Area and San Joaquin) appear to include similar penalty guidelines in separate implementation guidance instead of in their analogous rules.

*Staff Response* The subdivision (h) penalty provisions will not be included in the Rule forwarded to the U.S. EPA as part of a SIP submittal.

### PUBLIC COMMENTS AND RESPONSES

A PAR 445/444 public workshop was held on February 13, 2013. A public consultation meeting was subsequently held on March 28, 2013. In addition to the oral comments at the meetings, staff received written comment letters specific to PAR 445/444 during a comment period that originally closed on March 8, 2013 but was extended until April 4, 2012 in conjunction with the public consultation meeting. Many of the comments on PAR 445/444, the preliminary draft staff report, or the revised preliminary draft staff report concerned issues brought up by more than one commentator. The following are general responses to these comments. Following these general responses is a summary of individual oral and written comments, followed by AQMD staff responses.

#### General Comments and Responses

##### PAR 445

**GR-1: The hearth product industry has worked closely with the U.S. EPA to develop Phase 2 Qualified retrofit devices and fireplaces. The AQMD should recognize these accomplishments and Rule 445 text should specifically state that U.S. EPA Phase 2 Qualified retrofit kits can be installed into homes with existing wood-burning fireplaces. Rule 445 should be amended to allow U.S. EPA Phase 2 Qualified Fireplaces to be installed in new or existing developments in certain areas such as mountain communities.**

*Staff Response:* AQMD staff is aware of the U.S. EPA program for Phase 2 Qualified Fireplace Retrofit Devices and Phase 2 Qualified Fireplaces. As mentioned in the staff

report, U.S. EPA Phase 2 Qualified Retrofit Devices can currently be installed into existing households constructed prior to March 9, 2009. Appendix B has a list of answers to Frequently Asked Questions (FAQs) and the underlined text has been proposed to further clarify the types of devices, including U.S. EPA Phase 2 Qualified Retrofit Devices that can be installed into existing households. AQMD staff believes that a specific Rule exemption for EPA Phase 2 Qualified Retrofit devices is not warranted due to the inclusion of the aforementioned statements in AQMD guidance documents. The updated FAQ will be posted on the HealthyHearths.org website.

The request to allow the installation of U.S. EPA Phase 2 Qualified fireplaces into new and existing developments above an elevation of 3,000 feet is more complicated as the current Rule 445 provisions only allow U.S. EPA Phase II-Certified wood heaters (i.e., stoves and inserts) in these areas. According to the U.S. EPA Burn Wise website U.S. EPA Phase II-Certified wood heaters are appliances that are usually made of cast iron, steel, or stone that burn wood for fuel and can be used as a primary or secondary source of heat. Fireplace inserts are similar in function and performance to free-standing wood stoves, but are designed to be installed within the firebox of an existing masonry or metal fireplace. These heating devices are different than the two major types of wood-burning fireplaces: traditional masonry fireplaces that are typically built of brick or stone and are constructed on site by a mason; and “low mass” fireplaces that are engineered and pre-fabricated in a manufacturing facility prior to installation. Most fireplaces, whether masonry or low mass, are not used as a primary source of heat; their function is primarily for ambiance and secondary heating<sup>16</sup> In addition to the inherent differences between wood heaters and fireplaces described above the devices are subject to two different emissions measurement methodologies. Because of these differences it is very difficult to make a comparison of heating efficiency and emissions between these two general categories of hearth devices. These differences are acknowledged on the U.S. EPA Burn Wise web site through the statement below:

\*The wood-burning appliances that are "qualified" under the EPA's Voluntary Fireplace Program are not "certified" per EPA's Wood Heater New Source Performance Standard. Contact your state or local air quality agency for clarification on the type of wood-burning appliances, if any, that may legally be installed in your area.<sup>17</sup>

Because of the fundamental differences between the two types of devices and the potential increase in emissions associated with allowing U.S. EPA Phase 2 Qualified devices to be installed in new and existing mountain community developments AQMD staff does not recommend the requested Rule amendment.

**GR-2: Outreach and public education is a key element of an effective wood smoke reduction program. These outreach efforts should include more information from the U.S. EPA's Burn Wise program including the installation of low emission retrofit kits for existing wood burning households. All public outreach activities should be conducted in multiple languages to make sure the message is understood. Funding for outreach and incentive programs should be part of the AQMD Governing Board approval process for PAR 445.**

*Staff Response:* AQMD staff agrees. An extensive public education and outreach program has been a vital component of the Healthy Hearths initiative since 2008 and efforts have been ongoing to increase public outreach capabilities. For example, AQMD recently

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<sup>16</sup> <http://www.epa.gov/burnwise/appliances.html#woodstoves>

<sup>17</sup> <http://www.epa.gov/burnwise/fireplacelist.html#fireplaces>

partnered with local media outlets to educate the public on the Check Before You Burn program <http://www.aqmd.gov/hb/attachments/2011-2015/2012Sep/2012-Sep7-004.pdf> This is in addition to the existing education and outreach efforts included on the AQMD Healthy Hearths™ website.<sup>18</sup> Additional efforts will be explored to further enhance the Rule 445 education and outreach program prior to the 2013/14 winter season.

AQMD staff has reviewed the U.S. EPA Burnwise website and believes that the AQMD Healthy Hearths™ web site can be enhanced by including additional information including, but not limited to, a description of the U.S. EPA Phase 2 Qualified Retrofit Device program, messaging techniques tailored to households that burn wood for heat, and additional information for consumers. The information could be crafted to provide a description of options to reduce emissions for households that presently burn wood and plan to continue to burn wood in the future. Specifically, the web update could specify that installation of a U.S. EPA Phase 2 Qualified fireplace retrofit kit is an option for existing households and not prohibited under Rule 445. The message would have to be clear, however, that no solid fuel burning is allowed during a mandatory winter burning curtailment and that the AQMD is not promoting any particular device. The Healthy Hearths™ web site is currently translated in Spanish and efforts will continue to provide the information in the languages of the affected communities. Staff will be seeking Board approval for the allocation of up to \$500,000 or more in funds to help with wood smoke reduction outreach and incentive activities.

**GR-3: There are too many exemptions included in existing rule 445 and the goal should be to end wood burning for unnecessary, aesthetic purposes.**

*Staff Response:* Air pollution regulations are typically based on the most stringent measures adopted by other agencies for regions with similar air pollution sources and pollution levels and due to the needs of the region in terms of protecting public health and seeking necessary emissions reductions. Staff is unaware of any air pollution control district or state agency that has a regulation that bans the indoor or outdoor burning of wood in wood burning devices, aesthetic or otherwise, except during periods of poor air quality. Restrictions do, however, include limitations on wood burning devices in newer residential developments. The existing Rule 445 provisions were developed after a detailed review of other California air district regulations and include exemptions considered appropriate for this region. PAR 445 would strengthen the existing rule requirements to further protect public health during days of anticipated poor air quality during winter months. It should be noted that PM<sub>2.5</sub> is the primary health effects driver during the winter for which wood burning curtailments are effective.

**GR-4: The public education and outreach program should also provide the public with financial incentives to install a variety of low emission hearth products, including retrofit devices for existing wood burning fireplaces. The existing gas log incentive is a good option for many households but not feasible for households without natural gas service or those without a gas line serving the fireplace.**

*Staff Response:* AQMD staff concurs that incentive programs are an effective way to encourage the public to switch to low emission products. As an example, the existing gas log buy down program has resulted in the installation of more than 102,000 gas log sets in Basin households. AQMD staff is exploring additional sources of funds to enhance the incentive program and is considering a larger list of low emission hearth devices for consumers, especially in areas that are not subject to the curtailment provisions (i.e., areas above 3,000 feet in elevation, areas without natural gas service and low income households). The types of

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<sup>18</sup> <http://www.aqmd.gov/healthyhearths/index.htm>

low emission hearth devices under consideration for an enhanced incentive program include natural gas fireplace inserts, alcohol-fueled burners and appliances, U.S. EPA Phase II-certified wood heaters (stoves/inserts), U.S. EPA Phase 2 Qualified Retrofit Devices, manufactured logs and other devices intended to reduce emissions from residential hearth products. The incentive program could also be targeted to areas that typically experience peak PM<sub>2.5</sub> concentrations or to low income households that burn wood for heat.

**GR-5: A Basinwide curtailment program may be very difficult to enforce and may confuse the public if the intent is to reduce emissions at peak, inland Basin monitoring sites. Moreover, curtailment days are typically called during periods of stagnation so it would seem unlikely that emissions from coastal or northwestern Basin communities could ever impact inland Basin monitoring sites. Implementing a curtailment program on a county-wide as opposed to Basin-wide basis may be more effective to target areas where elevated PM<sub>2.5</sub> levels are forecast and may be more supported by the public. The exemption provided for low income households would allow wood burning in communities that currently experience peak PM<sub>2.5</sub> concentrations.**

*Staff Response:* The Basinwide winter burning curtailment provisions are an important component of the adopted 2012 AQMP residential wood-burning control measure because modeling showed that 60 percent of emissions captured at the peak PM<sub>2.5</sub> monitoring sites originate from outside the adjoining source receptor areas. While it is acknowledged that wood smoke emissions are less likely to migrate during extreme stagnation conditions, the emissions that occur during these periods do not dissipate quickly and can be entrained to distant monitoring sites when the inversion has eased. Therefore, prevention of coastal and near coastal wood smoke emissions will have benefits to inland monitoring sites, even under stagnate conditions. Emissions from low income households that invoke existing exemptions and plan to burn wood on mandatory curtailment days is a difficult challenge experienced by all air districts. The intent is to balance the need for improved air quality while not impacting a person's right to warmth and comfort during winter months. To that end, the District will seek to develop a targeted incentive program to encourage low income households that burn wood for heat to switch to cleaner, low emission heating devices or hearth products. This may involve larger incentive amounts than what is currently provided to the general public. Please also refer to the incentive discussions under GR-2 and 4.

**GR-6: The applicability of the Mandatory Winter Burning Curtailment provisions to wood-fired cooking devices but not charcoal grills is unsupportable. A pellet-fueled appliance consists of a highly efficient fan forced, balanced, carbureted fire which is presumed to have an emissions rate that is similar to a charcoal grill. It is recommended that efforts to control emissions during a Mandatory Winter Burning Curtailment should focus on the device or appliance used rather than the fuel.**

*Staff Response:* As mentioned, the definition of wood based fuels includes wood, wood-based product, or non-gaseous or non-liquid fuel, including but not limited to manufactured firelogs, wood or pellet products and does not include charcoal. Rule 445 provisions are currently based on appliance type and this has resulted in confusion as appliances are periodically changing. AQMD staff believes that specifying applicability based on fuel type provides a clear public message as to the days when certain products are not to be used (i.e., No-Burn Day – Do Not Burn Wood). Charcoal use is also excluded from the mandatory winter burn curtailment provisions as emissions from a charcoal cooking fire are believed to be lower than that of a wood-based cooking fire as charcoal is previously burned wood that has already been subject to the initial high emission wood burn rate. This statement is supported by the U.S. EPA's AP-42 (Compilation of Emissions Factors) document that

indicates that after an initial wood burning phase there is a “charcoal stage” of the burn cycle characterized by a slower burn rate and decreased emissions (EPA, 1996). Establishing curtailment applicability based on fuel type also clarifies the rule intent by not allowing a person burning wood during a mandatory winter burning curtailment to claim that the fire was intended for cooking purposes. Charcoal, as opposed to wood-based products, is specifically designed for cooking food and it is therefore more likely that the person using charcoal during a mandatory winter burning curtailment is genuinely cooking food.

#### PAR 444

**GR-7: Smoke and odor coming from coastal fire pits is a nuisance for the area’s residents and visitors. The emissions can impact many properties including those located inland from the beach. Some users of fire rings burn scrap wood (including painted wood) and garbage (reflected by remnants the following day). Burning painted wood or garbage generates toxic emissions.**

*Staff Response:* Staff agrees and this is the genesis for this proposed amendment. In addition to the prior response, the fuel mentioned exacerbates the potential health effects from exposure, even if from a short distance. PAR 444 provisions related to beach burning are intended to address residents’ and beach goers’ concerns regarding adverse health effects and loss of enjoyment associated with open burning at beaches.

**GR-8: The beach fire rings are not a significant source of air pollution and should not be regulated. There are many other sources of air pollution that should be regulated. The fire rings are a southern California tradition and should be preserved for future generations.**

*Staff Response:* As noted in the staff report, wood smoke poses a potential health exposure risk to beach goers and nearby residents. Wood smoke from beach fires can affect the public health and is a local exposure risk to the surrounding community. This is further magnified as many of those using the fire rings have been observed burning materials other than fire wood. Federal, State, and local air pollution regulations have been implemented for all forms of particulate pollution and every effort continues to be made to address emissions from all source categories. Low emission alternatives, such as use of gaseous fuels, may be a potential solution that would allow the continued use of fire rings in southern California.

### **Individual Comments and Responses**

#### **PAR 445**

##### **Targeted Incentive Programs**

Comment 1: The incentive program should first be implemented in peak PM2.5 areas as a means to achieve the PM2.5 standard thereby alleviating the need for Basinwide curtailment days.

*Staff Response:* As mentioned in the draft staff report the incentive program is under development and, based on AQMD Governing Board direction, may be targeted to areas that currently experience peak PM2.5 concentrations. Please also refer to GR-4.

##### **U.S EPA Phase 2 Qualified Retrofit Kits for Existing Wood-Burning Fireplaces**

Comment 2: The vast majority of wood-burning emissions come from the Basin’s estimated 1.2 million open hearth fireplaces. Industry has developed retrofit devices that are

considered U.S. EPA Phase 2 Qualified Devices that can be installed for a relatively small cost and greatly reduce emissions from these sources. The district should fulfill their legal and ethical obligations under the Clean Air Act and under California State Law to review all Reasonably Available Control Technologies (RACT) and Best Available Control Measures (BACM) for wood burning fireplaces by implementing a program to require the installation of U.S. EPA Phase 2 Qualified fireplace retrofit devices upon the sale or transfer of real property.

*Staff Response:* As noted in the draft staff report, U.S. EPA's Phase 2 Qualified Fireplace Program is a voluntary effort to encourage manufacturers to improve air quality through developing and distributing cleaner, more efficient wood-burning appliances. There are two general types of fireplace products under the program: Phase 2 Qualified Fireplaces and Phase 2 Qualified Fireplace Retrofit Devices. Phase 2 qualified fireplaces are stand alone hearth devices intended to be installed in new developments or room additions, while retrofit fireplace devices are intended to be installed into existing wood burning fireplaces. Rule 445 provisions do not allow the installation of U.S. EPA Phase 2 Qualified Fireplaces; however, U.S. EPA Phase 2 Qualified Fireplace Retrofit Devices are not prohibited by Rule 445 and therefore can be installed in existing wood-burning fireplaces; that is, residential fireplaces constructed before March 9, 2008. As noted above, EPA's Phase 2 Qualified Fireplace Program is voluntary program.

### **Solid Fuel Labeling Requirements**

Comment 3: The labeling provisions will create additional expenses for industry and there is no evidence of increased rule compliance resulting for product labeling.

*Staff Response:* AQMD staff believes that public education and outreach is a vital component to inform the public on the Check Before You Burn program. To that end, the PAR 445 labeling provisions are intended to inform a targeted audience, wood-based fuel consumers. Contacts with Bay Area AQMD staff indicated 300,000 calls to the 877-4NO-BURN line during the 2011/12 winter season and nearly 200,000 contacts this past 2012/13 season. While it is acknowledged that it is not possible to tell the number of 877-4NO-BURN calls attributable to the labeling program AQMD staff believes that it is an important part of a comprehensive wood smoke education and outreach program.

Comment 4: Industry has worked closely with other air districts to comply with labeling requirements for wood-based fuel products. The district should utilize the same labeling requirements (e.g., toll free number [1-877-4NO-BURN] and website [[www.8774NOBURN.ORG](http://www.8774NOBURN.ORG)]) to minimize costs to industry.

*Staff Response:* As mentioned in the staff report AQMD commits to minimize impacts to solid fuel sellers by providing a guidance document that provides a list of compliance options to meet the PAR 445 labeling requirements. The options allowed under PAR clause (d)(5)(A)(i) include the labeling requirements used by the Bay Area Air Quality Management District as well as other alternatives subject to approval of the AQMD Executive Officer. At a minimum, this would include the toll free and website information mentioned above but would also include South Coast AQMD-specific information for use by local bulk wood sellers. The compliance options would also ensure the continuance of the South Coast AQMD program in the unlikely event that the [1-877-4NO-BURN] and website [[www.8774NOBURN.ORG](http://www.8774NOBURN.ORG)] options are removed or amended in the future by the Bay Area AQMD.

Comment 5: A one year effective date is too short for implementation of the labeling requirements as products not sold during one winter season may be stored for future sales. A two-year phase in period, based on the date of implementation of the labeling provisions, is requested to account for products that were already packaged for sale.

*Staff Response:* PAR 445 has been amended to establish a six month effective date for product labeling but the net change is not considered significant as this requirement will primarily be applicable to bulk wood sellers that would be required to hand out a one page flyer to customers during the 2013/2014 winter burning season. Sellers of packaged wood-based products will also be subject to the same six-month effective date but sell through provisions have been added in subparagraph (d)(5)(B) that would allow the sale of any product for up to two years after the six month implementation period of the PAR 445 labeling provisions.

Comment 6: There are wood pellets, mesquite and other wood-based products that are sold for cooking purposes. These products cannot be used during a mandatory winter burning curtailment. Why are these wood-based fuels exempt from the labeling requirements if they are prohibited from use during a mandatory winter burning curtailment?

*Staff Response:* The labeling requirements do not apply to wood-based fuel that is used or intended for cooking food since such products are less widely used and represent an unnecessary cost to the packaging industry.

#### **Rule 445 applicability to cooking devices**

Comment 7: Does Rule 445 apply to wood-fired cooking devices?

*Staff Response:* Wood-fired cooking devices designed and used for commercial purposes are exempt from all Rule 445 provisions. A wood-fired cooking device can be bought, sold, or installed on residential properties under PAR 445 provisions but cannot be used during a Mandatory Winter Burning Curtailment.

#### **Mandatory Winter Burning Curtailment Duration**

Comment 8: The previous version of Rule 445 specified that a mandatory curtailment would occur on specified days but PAR 445 states that the curtailments would apply to unspecified period of time which may be confusing to the public.

*Staff Response:* The PAR 445 Mandatory Winter Burning Curtailment definition has been modified to be applicable to any “calendar day or consecutive calendar days”.

#### **Definition for Existing Structures**

Comment 9: Rule 445 presently includes a definition for New Developments but a similar definition is not included for Existing Structures. This has lead to confusion at local jurisdiction building departments as to what can and cannot be installed by residents. A new definition for an Existing Structures may help clarify the rule intent and improve compliance.

*Staff Response:* AQMD staff concurs that a clear and consistent message to local government building department staff is necessary to ensure rule compliance and that the intended emissions reductions are achieved. In addition to presentations made to local governments AQMD staff has developed and made available a list of answers to Frequently Asked Questions (FAQs) through the Healthy Hearths™ web site.<sup>19</sup> The FAQ web site

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<sup>19</sup> [http://aqmdstage/rules/doc/r445/Builders\\_FAQ.pdf](http://aqmdstage/rules/doc/r445/Builders_FAQ.pdf)

information is divided into two sections: 1) requirements for New Developments (projects on vacant land, and 2) requirements for Existing Developments (room additions, remodels, etc.).

A copy of the current FAQ page as well as proposed changes in underline and strike-out are included as Appendix B. As noted in the appendix, changes have been made to clarify that Existing Developments are those where construction has ended before March 9, 2009. Additionally, a new section has been added to clarify that U.S. EPA Phase 2 Qualified Retrofit Devices can be installed into an existing wood-burning fireplace in an existing development. Please also refer to GR-1.

Additions to the FAQ page will be based on implementation issues but as noted in the appendix rule interpretations will be based on the adopted Rule 445 text.

### **Firewood Moisture Content**

Comment 10: Efforts should be made to ensure that existing Rule 445 firewood moisture content levels provisions (e.g., 20 percent or less from July through February) are enforced. Ensuring that only seasoned wood is sold and used during winter months will reduce emissions and may help alleviate the need for curtailment days. Industry representatives are very familiar with methodologies and techniques to measure moisture content and can serve as a partner to ensure the sale of properly seasoned wood in accordance with existing Rule 445 provisions.

*Staff response:* AQMD staff has consulted with other air districts to assist with wood smoke reduction compliance programs but would be pleased to receive information from industry representatives. Dry seasoned wood is relatively easy for buyers to distinguish from green, unseasoned wood, in that it has a hollow sound when hit together. Tips on identifying seasoned firewood have been provided to the public as part of the Healthy Hearths™ outreach materials. As mentioned in response to comment GR-2 AQMD staff will explore linking video information, including information on proper firewood selection, from the U.S. EPA Burnwise web site to the Healthy Hearths™ website.

## **PAR 444**

### **Fire Suppression Training Exercises**

Comment 11: Fire suppression training exercises are exempt from the current version of PAR 444 if certain conditions are met. Do the proposed Rule 444 amendments change those existing exemption provisions during the newly established Mandatory Winter Burning Curtailment period? Could this be clarified in the draft staff report?

*Staff Response:* There are no changes to the exemptions previously provided for fire suppression training exercises. The staff report discussion under the heading, Executive Summary – PAR 444 has been clarified.

### **444 Beach Fires Applicability**

Comment 12: How would the PAR 444 provisions apply to beach pit fires on beaches?

*Staff Response:* PAR 444 includes a definition for beach burning. Beach pit fires would be prohibited under the proposed amendments beginning January 1, 2015. Under PAR 444 a city or county could, though formal action, make the prohibition effective sooner than January 1, 2015

Comment 13: When would the beach fire prohibition be implemented?



*Staff Response:* PAR 444 provisions would be effective beginning January 1, 2015. Under PAR 444 a city or county, through formal action, could make the prohibition effective sooner than January 1, 2015.

Comment 14: There are beach fire rings in close proximity to residential or commercial uses but in some instances there are no inhabited structures. Why would the prohibitions apply in these areas?

*Staff Response:* Wood smoke not only presents an exposure concern to those involved with the beach burning, but it can also pose a health risk to those some distance away. Depending on the weather condition, high concentrations can travel and cause distress for anyone with respiratory or cardiovascular ailments.

Comment 15: PAR 444 would prohibit open burning in beach areas. Would it also apply to camp fires? Why are beach fires targeted when backyard burning is not targeted?

*Staff Response:* As mentioned no changes are proposed for the existing exemptions for recreational/ceremonial burning, cooking fires, and fires for warmth at social gatherings for all activities other than beach burning. However, extending the prohibition to the other open burning activities, including camp fires, is currently under consideration. Residential fireplaces as well as bBackyard burning devices and the use of such devices are subject to AQMD Rule 445 provisions.

Comment 16: It appears the PAR 444 beach burning prohibitions would apply to public coastal areas. Do the provisions also apply to open burning on private beaches?

*Staff Response:* Open burning activities conducted on beaches not open to the public are considered similar to residential backyard burning and would be subject to AQMD Rule 445 provisions. As mentioned in the draft final staff report, under PAR 445 provisions the definition for a wood-burning device would include open or enclosed devices. As a result of this change, installation of a permanent wood-burning fire pit on residential properties would be prohibited under the provisions of subdivision (d).

Comment 17 6: Would a Smoke Management Plan approved by the AQMD Executive Officer be required before any community allows or continues to allow recreational burning?

*Staff Response:* With the exception of paragraph (d)(3), which includes a prohibition on of specific burning activities (including beach burning), the Rule 444 exemptions for recreational/ceremonial burning, cooking fires, and fires for warmth at social gatherings remain in effect for all activities.

Comment 18 7: Is a highly used recreational area like a park or a beach considered a Sensitive Receptor Area given the significant number of children or other sensitive persons that could be exposed to smoke, PM2.5, or other noxious compounds?

*Staff Response:* AQMD Rule 1470 defines a Sensitive Receptor as any residence including private homes, condominiums, apartments, and living quarters, schools, preschools, daycare centers and health facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing.

Comment 19 8: What is considered a beach area? Would a bluff area overlooking the ocean be considered a beach area?

*Staff Response:* Paragraph (c)(7) of PAR 444 includes a definition of beach burning. As noted below, coastal bluffs ~~may would not~~ be considered beach areas if they are adjacent and used for beach access or recreation.

BEACH BURNING means any recreational, ceremonial or open burning conducted in any public coastal area, marked by an accumulation of sand, stone, or gravel that has been deposited by the tide or ocean waves, including any adjacent areas used for beach access or recreation. For the purposes of this rule, beach burning does not include the use of charcoal or a gaseous or liquid fuels in the preparation or warming of food for human consumption.

### **Beach Fire Access**

Comment 20 19: Proponents of removing the fire rings argue that this would deprive them of “access” to burning wood as a low-cost activity they enjoy. But the real “accessibility” issue is that many people are prevented from accessing and using the beaches due to wood smoke’s caustic, deadly fumes. The Americans with Disabilities Act (ADA) is basic civil rights law that requires cities to remove barriers to the access and use of public spaces. To those with breathing or cardiac disabilities, wood smoke presents a true “physical barrier” to use of the beach areas where wood burning is allowed.

*Staff Response:* Thank you for your comment. The purpose of prohibiting beach fires is precisely to eliminate health exposure risk to beach goers and the nearby residences originating from such activities. To the extent the commentator has a concern with the Americans with Disability Act, the commentator should raise that concern with the city or county where the fire rings are located.

### **Loss of revenue from beach fire prohibition**

Comment 21 0: The City of Huntington Beach estimates a loss in revenue of one million dollars due to a reduction in fees collected for parking after 3 PM. OC State Parks estimates a loss of \$21,000 in revenue from firewood sales during the third quarter.

*Staff Response:* Staff acknowledges a reduction in parking revenues. Prohibition of beach burning would reduce PM emissions and public exposure to harmful pollutants.

Comment 22 1: Hotels, stores and other businesses in the area would be impacted by a reduction in beach goers that specifically travel to the areas to use beach fire rings. A local hotel sells between \$50 and 60 thousand dollars per year in kits to make campfire smores and the hotel staff has indicated that some clients specifically stay at that hotel due to the proximity to the beach fire rings and the ease of access to a nighttime activity.

*Staff Response:* While it is acknowledged that there may be a reduction in business revenues from persons that specifically travel to the beach to use beach fires rings, the goal of the proposed Rule 444 revisions is to reduce PM emissions and protect public health. Additionally, during the rule development process there have been commentators that have indicated that they do not go to the beach or surrounding areas due to the presence of smoke from beach fires. The proposed amendments would also allow the use of charcoal, gaseous, or liquid fuels at beach areas.

### **Alternative Controls for Beach Fires**

Comment 23 2: There are other alternatives to reduce emissions from beach fires and removal of all the rings is not necessary. For example, the number of rings could be reduced

or they could be moved to be farther away from sensitive land uses. Education programs could be developed to ensure that the public was informed on the health effects from burning garbage. Better enforcement could be used to ensure than only clean dry wood is used. Beach fire burning could be prohibited only on high pollutions days.

*Staff Response:* Reducing the number of fire rings or improved enforcement of fuel type usage could reduce emissions but the source would still contribute to exceedance of State and federal air quality standards and public exposure to harmful pollutants. As mentioned at the public consultation meeting AQMD staff is exploring the possible use of liquid or other clean fuels to dramatically reduce emissions from beach fire rings. The proposed amendment would also allow the use of charcoal or liquid or gaseous fuels.

Comment 24 3: Please consider that each jurisdiction is different with respect to potential impacts from wood burning smoke. For instance, some cities have residential units within close proximity to their beaches. That is not the case with Huntington Beach. The decision should be left up to the local jurisdiction.

*Staff Response:* Although it is recognized that the proximity of fire rings to residential land uses varies in southern California AQMD staff has received comments from residents of both the Cities of Newport Beach and Huntington Beach on their concerns about smoke emissions from beach fires.

### **Timing, Outreach and Available Data**

Comment 25 4: There hasn't been enough time for the public to consider the proposal and there should be meetings in beach communities to get more public input. More information is needed on emissions and health effects from beach fire burning. Special studies need to be conducted during summer months to clearly identify the extent of pollution from beach fires. Affected jurisdictions were not properly notified of the March 28, 2013 public consultation meeting. Additional time is requested so that impacted parties can provide additional input and suggestions.

*Staff Response:* The effective date of the PAR 444 beach burning proposal is January 1, 2015. The health effects from wood smoke exposure are well understood and have been summarized in the draft staff report. AQMD staff continues to review and evaluate public input and the public is able to provide additional comments to AQMD Governing Board members at the public hearing. AQMD data collection is ongoing and will be presented to the public as part of the rule development process. The public consultation meeting notification was mailed to each jurisdiction in the South Coast Air Basin and was published in the Los Angeles Times, Press Enterprise, Los Angeles Daily Journal, San Bernardino County Sun and Orange County Register newspapers on March 18, 2013. The meeting notice was also published on the SCAQMD calendar page at: <http://www.aqmd.gov/calendar/calev.html> and also on our proposed rule web page at: [http://www.aqmd.gov/rules/proposed.html#445\\_444](http://www.aqmd.gov/rules/proposed.html#445_444). Efforts to improve outreach to affected communities continue. Per AQMD Board resolution, the public hearing for PAR 444 provisions related to open burning beach areas was rescheduled from May 3<sup>rd</sup> to June 7<sup>th</sup>, 2013.

### **Magnitude of Beach Fire Emissions**

Comment 26: The draft staff report does not provide details on how the estimate of 0.16 to 0.25 ton of PM<sub>2.5</sub> from the Basin's beach fires was estimated. Based on an emission rate of 5.3 grams per kilogram and a lower, more realistic wood burning rate the annualized

average emissions from the Basin's fire rings can be estimated to be an order of magnitude lower than the information provided by AQMD.

Staff Response: As described in the draft staff report, the PM2.5 emissions estimate was based on two to three bundles of wood (~17 pounds per bundle) burned at each of the Basin's fire rings per night. The PM2.5 emission factor (22.7 pounds per ton) used is from a California Air Resources Board (CARB) emissions inventory report and represents estimated emissions from burning cord wood bundles. For reference, the U.S. EPA AP-42 (Compilation of Emissions Factors) PM10 emission factor for burning cord wood in a fireplace is 34.6 pounds per ton (17.3 grams per kilogram). The emission rate quoted by the commentator is from a research project analyzing the chemical characterization of wood grown in the northeastern United States. Use of an emissions inventory emission factor is more appropriate than emission rates contained in research papers. AQMD staff believes that an average wood burning rate of two to three bundles is appropriate and accounts for very large, long duration fires. A lower average wood burning rate estimate would reduce the emissions estimates. As previously noted, the total number of fire rings has been increased to as many as 857.

Comment 27: Emissions from beach fire rings have a negligible effect on air quality or public health. The localized significance threshold (LST) for sensitive receptors and/or EPA's New Source Review (NSR) limits should be used to determine the significance of emissions from beach fire rings.

Staff Response: It is acknowledged that beach fire emissions are not a large contributor in terms of regional emissions but the PAR 444 beach burning provisions would have been proposed to address localized impacts. The LST threshold is used by AQMD staff for individual sources but not for rule development/amendment projects. NSR is used in conjunction with the permitting of stationary sources not for analyzing potential impacts from area sources such as open burning. Results of air quality sampling downwind from beach areas is a more appropriate indicator of potential public health impacts.

Comment 28: What is the amount of wood burned in beach fire rings compared to residential wood-burning fireplaces? In the draft staff report, if beach fire emissions are not included in the Table 4 (Open Burning) PM2.5 emissions inventory what are the other sources? Does Table 4 include fireplace emissions? Beach fire emissions are very small when compared with the emissions from residential wood combustion (Draft Staff Report Table 3) and open burning (Draft Staff Report Table 4).

Staff Response: As noted in response to comment number 27, beach fire emissions are a smaller source when compared to residential wood combustion and open burning but the PAR 444 beach burning prohibitions would reduce emissions and protect public health by reducing exposure of potentially high concentrations of wood smoke. The Open Burning inventory presented in Table 4 of the Final Draft Staff report includes emissions from agricultural and prescribed burning activity. Emissions estimates from residential wood combustion (fireplaces) are included in Table 3.

### **Safety of Alternatives to Traditional Open Beach Burning**

Comment 29: There have been discussions about use of natural gas- or propane-fueled devices on the Basin's beaches. A fire agency expressed concern about potential safety concerns about allowing the public to bring their own gaseous-fueled devices to the beach. Maintenance and safety concerns were also expressed if the devices were provided by the local jurisdiction.

Staff Response: PAR 444 would not require the installation of gaseous fueled devices. Any decision to install such devices would be at local jurisdiction discretion and the local jurisdiction could include any parameters necessary to ensure public safety. As mentioned, a RFP is under consideration to be released to fund a demonstration project for a low emission outdoor open burning beach fire pit ring. Securing the applicable permits and ensuring public safety are a key components of the demonstration project and the selected contractor(s) would be expected to design and install a prototype system that will meet or exceed industry standards and will be compliant with all applicable building, fire and electrical codes. It is also anticipated that local jurisdictions would be involved in the demonstration project(s) and can provide input on potential safety concerns.

**Comparison of Emissions Wood-Based Versus Gaseous Fuels for Beach Burning**

Comment 30: Propane produces gaseous emissions such as NOx and carbon monoxide. This proposal seems in conflict with SCAQMD’s plan to reduce NOx emissions. No information has been provided regarding differences in the particulate or gaseous emissions from wood burning versus propane therefore the public cannot make informed comments whether or not the proposal outweighs the expense.

Staff Response: As mentioned in the draft staff report the primary goal of the PAR 445 and 444 amendments is to reduce fine particulate emissions. For reference, a 2006 study included emission rates for aesthetic appliances based on various fuel types (Houck, 2006). The table below provides a comparison of NOx, PM and CO emission rates for wood and propane-fueled devices used for aesthetics. As shown in the table the NOx, PM and CO emission rates for propane (LPG) are less than those for cord wood.

<u>Aesthetic Appliance/Fuel Category</u>	<u>Pollutant Emission Rates (g/hr)</u>		
	<u>PM</u>	<u>CO</u>	<u>NOx</u>
<u>Cordwood Fireplace Used for Aesthetics</u>	<u>64.3</u>	<u>313</u>	<u>6.09</u>
<u>Vented Gas Log Set - LPG</u>	<u>.354</u>	<u>.246</u>	<u>2.29</u>

NOx is total nitrogen oxides, reported as NO<sub>2</sub>

**Public Hearing Notice**

Comment 31: The public hearing notice was released one day before the AQMD Governing Board voted to set the May 3, 2013 public hearing. The issuance of the public hearing notice was premature and future meetings should be scheduled with appropriate due process.

Staff Response: Under Health and Safety Code provisions, a public hearing notice and documents must be made available to the public 30-days in advance of the public hearing. There are times such as what occurred with PAR 445/444 when the AQMD Governing Board set hearing meeting (April 5, 2013) is less than 30-days prior to the adoption hearing (May 3, 2013). Accordingly, the public hearing notice had to be released on April 3, 2013 to meet statutory requirements. As mentioned in response to comment number 25 the public hearing for PAR 444 provisions related to open burning on beaches was rescheduled from May 3<sup>rd</sup> to June 7<sup>th</sup>, 2013.

## Appendix B

### **Rule 445 – Wood Burning Devices Local Government, Builder, Contractor, Architect Answers to Frequently Asked Questions (FAQs)**

**(April ~~December~~ 2013 ~~12~~)**

The following information has been prepared to assist in answering questions on AQMD Rule 445 – Wood Burning Devices. It should be noted that compliance determinations will be based on the specific Rule 445 language that can be viewed or downloaded at the following web site: <http://www.aqmd.gov/rules/reg/reg04/r445.pdf>

#### **REQUIREMENTS FOR NEW DEVELOPMENTS**

##### **When do the standards for new developments become effective?**

The requirement to only install gaseous-fueled fireplaces and stoves is applicable to any new residential or commercial development that **begins construction on or after March 9, 2009**.

The date that **construction has begun** is when the building permit is approved or when the foundation for the structure is started, whichever is first.

##### **What kind of fireplace or stove can be installed in new developments?**

Any gaseous-or liquid fueled fireplace, fireplace insert or stove can be installed in new developments. This includes any fireplace that is either factory-built or constructed on-site that is fueled exclusively with a gaseous fuel such that the burner pan and associated equipment are affixed to the metal or masonry base of the fireplace.

Gaseous-fueled devices include those fueled by either natural gas, ~~or~~ propane (i.e., liquefied petroleum gas) or alcohol.

##### **Do these new development requirements apply to both indoor and outdoor fireplaces?**

The requirements are applicable to any **permanently installed** device. **Permanently installed** is defined as built or installed such that it is attached to the ground, floor or wall and is not readily moveable. A free standing stove attached to an exhaust system that is built into or through a wall is considered permanently installed.

##### **Are there any exemptions to the requirements for new developments?**

There are two separate conditions where a cleaner wood burning device can be installed in a new development:

1. properties 3,000 or more feet in elevation; and
2. properties where there is no existing infrastructure for natural gas service within 150 feet of the property line.

The cleaner wood burning devices that could be installed under either of these two conditions include:

- ✓ U.S. EPA Phase II-certified wood heaters ~~or equivalent devices~~;
- ✓ pellet-fueled heaters; and
- ✓ masonry heaters (not masonry fireplaces).

If you would like additional details on the hearth products defined as cleaner wood burning devices under Rule 445, please refer to the discussion under the heading, “Requirements for Existing Developments”

## **REQUIREMENTS FOR EXISTING DEVELOPMENTS**

### **What is considered an existing development?**

An existing development is a residential or commercial property where construction had finished prior to March 9, 2009. Construction is considered finished as of the date of issuance of a use and occupancy permit.

### **When do the standards for existing developments become effective and Wwhat can be built as a new hearth device in existing developments?**

Beginning September 8, 2008, The the devices in three cleaner wood burning categories listed below (and any gaseous-fueled device) can be sold, offered for sale, or installed in existing developments.

1. U.S. EPA Phase II-certified wood heater (fireplace inserts or stoves)  
U.S EPA Phase II-certified devices have an identification label on the unit and the model name and number are also listed on the following web site:  
<http://www.epa.gov/Compliance/resources/publications/monitoring/caa/woodstoves/certifwood.pdf>
2. Pellet-fueled heater  
Pellet-fueled heaters can be operated on any pellet fuel including, but not limited to, ground, dried wood and other biomass wastes compressed into pellets and corn. Additional information on pellet heaters can be obtained from the U.S. EPA at the following web site: <http://www.epa.gov/burnwise/pelletstoves.html>
3. Masonry heater (not an open hearth fireplace)  
Technically listed as any device that meets the definition included in ASTM E 1602-03, a masonry heater is a site-built or site-assembled solid-fueled heating device, consisting of a firebox, a large masonry mass, and a maze of heat exchange channels. These devices are rare in warm climates such as Southern California but additional information can be obtained from the following U.S. EPA web site:  
<http://www.epa.gov/burnwise/appliances.html#masonryheaters>

### **What can be installed as a retrofit into an existing wood-burning fireplace in an existing development?**

There are essentially no Rule 445 restrictions as to what can be installed as a retrofit into a fireplace in an existing development. Residents may opt to install a gaseous-fueled, electric or visual product intended to simulate or replace wood burning or there may be other options. Residents that wish to continue burning wood but are interested in attempting to reduce emissions may opt to install a variety of products including a U.S. EPA Phase 2 Qualified Retrofit Device. Additional information on these products can be found at the web site below.

<http://www.epa.gov/burnwise/fireplacelist.html#retrofits>

Please note that local governments may have special codes or provisions when installing devices in fireplaces at existing developments. Also, please remember that all wood-based fuel burning is prohibited during a Mandatory Winter Burning Curtailment. This includes wood-based fuels used in indoor and outdoor devices.

### **Do the requirements for existing developments apply to both indoor and outdoor fireplaces?**

The requirements apply to any **permanently installed** device either indoors or outdoors.



**Permanently installed** is defined as built or installed such that it is attached to the ground, floor or wall and is not readily moveable. A free standing stove attached to an exhaust system that is built into or through a wall is considered permanently installed.

**What if I need to repair my existing fireplace?**

An existing wood-burning fireplace can be repaired or replaced and would not be subject to the Rule 445 requirements for existing developments provided that the repair or replacement occurs within the same footprint as the existing wood-burning fireplace. If a home or chimney inspection documents the need for replacement of an existing wood-burning fireplace, however, installation of a gaseous-fueled hearth device is encouraged and may be required by a local government or other regulation.

**Can a U.S. EPA Phase 2-Qualified open hearth wood-burning fireplace be installed as a new hearth device in an existing development?**

No. The only wood-burning devices allowed to be installed in existing developments are EPA Certified inserts/stoves, pellet heaters and masonry heaters (not open hearth fireplaces). Additional information on the U.S. EPA Phase 2-qualified program is available at <http://www.epa.gov/burnwise/fireplaces.html> As noted on the U.S. EPA web page:

*“The wood-burning appliances that are “qualified” under the EPA’s Voluntary Fireplace Programs are not “certified” per EPA’s Wood Heater New Source Performance Standard”.*

**Can I install a wood-burning pizza oven or other wood-based cooking device at my home?**

Yes but such devices would be subject to the Mandatory Winter Burning Curtailment provisions. Wood-fired cooking devices designed and used for commercial purposes are exempt from all Rule 445 provisions. Fireplace retrofit kits can also be installed into any fireplace constructed prior to March 9, 2009.

~~Rule 445 contains an exemption for cook stoves on residential properties. Title 40 of the Code of Federal Regulations (CFR) Section 60.531, February 28, 1988 as a wood fired appliance that is designed primarily for cooking food and has the following characteristics:~~

- ~~(1) An oven, with a volume of 0.028 cubic meters (1 cubic foot) or greater, and an oven rack,~~
- ~~(2) A device for measuring oven temperatures,~~
- ~~(3) A flame path that is routed around the oven,~~
- ~~(4) A shaker grate,~~
- ~~(5) An ash pan,~~
- ~~(6) An ash clean-out door below the oven, and~~
- ~~(7) The absence of a fan or heat channels to dissipate heat from the appliance.~~

~~Any device that meets all CFR specifications above is exempt from Rule 445 requirements.~~

~~Rule 445 does not apply to any wood fired or other solid fuel cooking device on commercial properties.~~

**Are there any exemptions to the requirements for existing developments?**

There are no retrofit or replacement requirements under Rule 445 when buying or selling a home with an existing wood burning fireplace or stove.

Additionally, properties that are registered as a historical site, or are contributing structures located in a Historic Preservation Overlay Zone are exempt from paragraph (d)(2) provisions. Refer to your local city or county agency to determine if your property is within a Historic Protection Overlay Zone.

ATTACHMENT I



South Coast  
Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4182  
(909) 396-2000 • www.aqmd.gov

**SUBJECT: NOTICE OF EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT**

**PROJECT TITLE: PROPOSED AMENDED RULE 444 - OPEN BURNING, AND PROPOSED AMENDED RULE 445 – WOOD BURNING DEVICES**

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, the South Coast Air Quality Management District (SCAQMD) is the Lead Agency and will prepare a Notice of Exemption for the project identified above.

Proposed amended Rule (PAR) 445 would clarify rule applicability to solid fuel cooking devices, require commercial firewood facilities to label solid fuel products for sale to inform the public of the Check Before You Burn program, lower the PM<sub>2.5</sub> concentration threshold used for the mandatory winter burning curtailment program from 35 to 30 µg/m<sup>3</sup>, and establish a mechanism whereby the mandatory winter burning curtailment program would apply Basin-wide if a no burn day is forecast for a source receptor area that exceeds the PM<sub>2.5</sub> concentration threshold. PAR 444 would add a definition for product testing, establish an exemption from PAR 444 for product testing, establish a winter season burn restriction consistent with PAR 445, and prohibit beach burning.

SCAQMD staff has reviewed the proposed project pursuant to the CEQA Guidelines §15308 – Actions Taken by Regulatory Agencies for Protection of the Environment. Based on SCAQMD staff's review, proposed amended Rules (PARs) 444 and 445 would have no potential for generating significant adverse environmental impacts because PAR 444 incorporates the winter season burn restriction consistent with PAR 445 and prohibits open burning in beach areas; and PAR 445 prohibits sub-regionally burning in indoor or outdoor burning devices when PM<sub>2.5</sub> concentration exceeds 30 µg/m<sup>3</sup> and prohibits Basin-wide if exceeded at a monitoring station, which has recorded violations of the PM<sub>2.5</sub> standard in either of the previous two years. The proposed project would reduce air pollution and toxic air pollutant health risk and not generate significant adverse environmental impacts. Upon adoption, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties.

Any questions regarding this Notice of Exemption should be sent to me (c/o Planning, Rule Development & Area Sources) at the above address. I can also be reached at (909) 396-2706.

Date: May 3, 2013

Signature: 

Michael Krause  
CEQA Program Supervisor  
Planning, Rule Development &  
Area Sources

Reference: California Code of Regulations, Title 14

## NOTICE OF EXEMPTION

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<b>To:</b> County Clerks of Los Angeles, Orange, Riverside, San Bernardino	<b>From:</b> South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765
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**Project Title:**

Proposed Amended Rule 444 - Open Burning and Proposed Amended Rule 445 – Wood Burning Devices

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**Project Location:**

South Coast Air Quality Management District (SCAQMD) area of jurisdiction consisting of the four-county South Coast Air Basin (Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portions of the Salton Sea Air Basin and the Mojave Desert Air Basin.

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**Description of Nature, Purpose, and Beneficiaries of Project:**

Proposed amended Rule (PAR) 445 would clarify rule applicability to solid fuel cooking devices, require commercial firewood facilities to label solid fuel products for sale to inform the public of the Check Before You Burn program, lower the PM<sub>2.5</sub> concentration threshold used for the mandatory winter burning curtailment program from 35 to 30 µg/m<sup>3</sup>, and establish a mechanism whereby the mandatory winter burning curtailment program would apply Basinwide if a no burn day is forecast for a source receptor area that exceeds the PM<sub>2.5</sub> concentration threshold. PAR 444 would add a definition for product testing, establish an exemption from PAR 444 for product testing, establish a winter season burn restriction consistent with PAR 445 and prohibit beach burning.

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**Public Agency Approving Project:**

South Coast Air Quality Management District

**Agency Carrying Out Project:**

South Coast Air Quality Management District

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**Exempt Status:**

Actions Taken by Regulatory Agencies for Protection of the Environment Exemption [CEQA Guidelines §15308]

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**Reasons why project is exempt:**

The SCAQMD has reviewed proposed amended Rules (PARs) 444 and 445 and determined that it is exempt pursuant to CEQA Guidelines §15308 – Actions Taken by Regulatory Agencies for Protection of the Environment because the proposed project would reduce air pollution and toxic air pollutant health risk and would not generate significant adverse environmental impacts. PARs 444 and 445 have no potential for generating significant adverse environmental impacts because PAR 444 incorporates the winter season burn restriction consistent with PAR 445 and prohibits open burning in beach areas; and PAR 445 prohibits sub-regionally burning in indoor or outdoor burning devices when PM<sub>2.5</sub> concentration exceeds 30 µg/m<sup>3</sup> and prohibits Basin-wide if exceeded at a monitoring station, which has recorded violations of the PM<sub>2.5</sub> standard in either of the previous two years.

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**Certification Date:**

SCAQMD Governing Board Hearing: May 3, 2013, 9:00 a.m.; SCAQMD Headquarters

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**CEQA Contact Person:**

Mr. Michael Krause

**Phone Number:**

(909) 396-2706

**Fax Number:**

(909) 396-3324

**Email:**

mkrause@aqmd.gov

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**Rule Contact Person:**

Mr. Michael Laybourn

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mlaybourn@aqmd.gov

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Date Received for Filing \_\_\_\_\_

Signature \_\_\_\_\_ *Signed upon certification*

Michael Krause  
CEQA Program Supervisor  
Planning, Rule Development  
and Area Sources