

CALIFORNIA AIR RESOURCES BOARD

**SIP COMPLETENESS CHECKLIST**  
(Electronic Format)

**\*\*\* TO BE COMPLETED BY DISTRICT AND RETURNED TO ARB \*\*\***

All rules submitted to the EPA as State Implementation Plan (SIP) revisions must be supported by certain information and documentation for the rule packages to be deemed complete for review by the EPA. Rules will not be evaluated for approvability by the EPA unless the submittal packages are complete. To assist you in determining that all necessary materials are included in rules packages sent to the ARB for submittal to the EPA, please fill out the following form and include it with the rule package you send ARB. See the ARB's Guidelines on the Implementation of the 40 CFR 51, Appendix V, for a more detailed explanation than is provided here. Adopted rules and rule amendments should be checked against U.S. EPA's Guidance Document for Correcting Common VOC & Other Rule Deficiencies (Little Blue Book, August 21, 2001) to ensure that they contain no elements which will result in disapproval by EPA.

District: South Coast Air Quality Management District

Rule No: 1121

Rule Title: Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters

Date Adopted or Amended: September 3, 2004

**ADMINISTRATIVE MATERIALS**

*Note: All documents should be in electronic format. Items that have signatures, initials, or stamps may be scanned.*

<u>Attached</u>	<u>Not Attached</u>	<u>N/A</u>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b><u>COMPLETE COPY OF THE RULE:</u></b> Provide an unmarked copy of the entire rule as adopted or amended by your District Board.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b><u>UNDERLINE AND STRIKEOUT COPY OF THE RULE:</u></b> If an amended rule, provide a complete copy of the rule indicating in underline and strikeout format all language which has been added, deleted, or changed since the rule was last adopted or amended.
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b><u>COMPLETE COPY OF THE REFERENCED RULE(S):</u></b> For any rule which includes language specifically referencing another rule, a copy of that other rule must also be submitted, unless it has already been submitted to EPA as part of a previous SIP submittal.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b><u>PUBLIC NOTICE EVIDENCE:</u></b> Include a copy of the local newspaper clipping certification(s), stating the date of publication, which must be at least 30 days before the hearing. As an alternative, include a copy of the actual published notice of the public hearing as it appeared in the local newspaper(s). In this case, however, enough of the newspaper page must be included to show the date of publication. The notice must specifically identify by title and number each rule adopted or amended.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b><u>RESOLUTION/MINUTE ORDER:</u></b> Provide the Board Clerk certified resolution or minute order. This document must include certification that the hearing was held in accordance with the information in the public notice. It must also list the rules that were adopted or amended, the date of the public hearing, and a statement of compliance with California Health and Safety Code Sections 40725-40728 (Administrative Procedures Act).
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b><u>PUBLIC COMMENTS AND RESPONSES:</u></b> Submit copies of written public comments made during the notice period and at the public hearing. Also submit any written responses prepared by the District staff or presented to the District Board at the public hearing. A summary of the public comments and responses is adequate. If there were no comments made during the notice period or at the hearing, please indicate N/A to the left.

CALIFORNIA AIR RESOURCES BOARD

**SIP COMPLETENESS CHECKLIST**  
(Electronic Format)

**TECHNICAL MATERIALS**

*Note: All documents and forms should be in electronic format.*

<u>Attached</u>	<u>Not Attached</u>	<u>N/A</u>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b><u>RULE EVALUATION FORM:</u></b> See instructions for completing the Rule Evaluation Form and the accompanying sample form.
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b><u>NON-EPA TEST METHODS:</u></b> Attach all test methods that are referenced in your rule that do not appear in 40 CFR 51, 60, 61, 63, or have not been previously submitted to EPA. EPA methods used in other media such as SW846 for solid waste are not automatically approved for air pollution applications. Submittal of test methods that are not EPA-approved should include the information and follow the procedure described in Region 9's "Test Method Review & Evaluation Process."
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b><u>MODELING SUPPORT:</u></b> Provide if appropriate. In general, modeling support is not required for VOC and NOx rules to determine their impacts on ozone levels. Modeling is required where a rule is a relaxation that affects large sources ( $\geq$ 100 TPY) in an attainment area for SO <sub>2</sub> , directly emitted PM <sub>10</sub> , CO, or NO <sub>x</sub> (for NO <sub>2</sub> purposes). In cases where EPA is concerned with the impact on air quality of rule revisions which relax limits or cause a shift in emission patterns in a nonattainment area, a reference back to the approved SIP will be sufficient provided the approved SIP accounts for the relaxation and provided the approved SIP used the current EPA modeling guidelines. If current EPA modeling guidelines were not used, then new modeling may be required.
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b><u>ECONOMIC AND TECHNICAL JUSTIFICATION FOR DEVIATIONS FROM EPA POLICIES:</u></b> The District staff report or other information included with the submittal should discuss all potential relaxations or deviations from RACT, RACM, BACT, BACM, enforceability, attainment, RFP, or other relevant EPA requirements. This includes, for example, demonstrating that exemptions or emission limits less stringent than the presumptive RACT (e.g., a CTG) meet EPA's 5 percent policy, and demonstrating that all source categories exempted from a RACM/BACM rule are de minimus according to EPA's RACM/BACM policy.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b><u>ADDITIONAL MATERIALS:</u></b> Provide District staff reports and any other supporting information concerning development of the rule or rule changes. This information should explain the basis for all limits and thresholds contained in the rule.

**APCD/AQMD RULE EVALUATION FORM – Page 1**  
(Electronic Format)

**I. GENERAL INFORMATION**District: South Coast Air Quality Management DistrictRule No(s): 1121 Date Amended: September 3, 2004Rule Title(s): Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water HeatersDate Submitted to ARB: December XX, 2006If an Amended Rule, Date Last Amended (or Adopted): December 10, 1999Is the Rule Intended to be Sent to the U.S. EPA as a SIP Revision?  Yes  No *(If No, do not complete remainder of form)*District Contact: Joe Cassmassi Phone Number: 909-396-3155 E-mail Address: jcassmassi@aqmd.govNarrative Summary of New Rule or Rule Changes:  New Rule  Amended Rule

Rule 1121 - Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters was amended to address the technical infeasibility of meeting the rule final emission limit for NOx (10ng/J) by the compliance date of January 1, 2005. The rule amendment extends the compliance date for the final NOx limit from one to three years based on the size and type of water heater. The rule also extends the mitigation fee program for sale of units not meeting the interim NOx limit of 20 ng/J.

Pollutant(s) Regulated by the Rule (Check):  ROG  (NOx)  SO2  
 (CO)  PM  TAC (name): \_\_\_\_\_

**II. EFFECT ON EMISSIONS**

*Complete this section ONLY for rules that, when implemented, will result in quantifiable changes in emissions. Attach reference(s) for emission factor(s) and other information. Attach calculation sheet showing how the emission information provided below was determined.*

Net Effect on Emissions:  Increase\*  Decrease\*\*  N/A

Emission Reduction Commitment in SIP for this Source Category: The December 1999 amendment of Rule 1121 took credit for NOx reductions of 1.4 tons/day in 2006, 4.5 tons/day in 2010 and 8.3 tons/day in 2015. Baseline emissions for the submittal were 9.2 tons/day in 2006, 10.0 tons/day in 2010 and 11.0 tons/day in 2015. Emission reductions were based solely on the final limit of 10 ng/J and did not take credit for reductions due to the interim standard of 20 ng/J or mitigation fee projects. In addition, the amendment took credit for additional reductions due to a California Energy Commission (CEC) energy recovery efficiency requirement of 76% (in the baseline). Relative to the 1997 AQMP inventory of 14 tons/day in 2010, reductions would be  $14 \text{ t/d} - [1 - 0.76] = 3.4 \text{ t/d}$ .

Inventory Year Used to Calculate Changes in Emissions: 2010 (10 tons/day) Area Affected: SCAQMDFuture Year Control Profile Estimate *(Provide information on as many years as possible)*: See attached Table 1 and Table 2

**APCD/AQMD RULE EVALUATION FORM - Page 2**  
(Electronic Format)

Baseline Inventory in the SIP for the Control Measure: See attached Table 3 (11.4 tons/day in 1993, 13.1 tons/day in 2006 and 14 tons/day in 2010 for the 1997/1999 AQMP)

Emissions Reduction Commitment in the SIP for the Control Measure: 7.6 tons/day reduction in 2010 from the 14 tons/day 2010 baseline (see discussion under Emission Reduction Commitment in SIP for this Source Category).

Revised Baseline Inventory (if any): With adjustment for a new DOE efficiency standard, an updated 2010 baseline is 10.0 tons/day X (1 - 0.08) or 9.2 tons/day. A revised baseline for 2004 would be 9.0 t/d X (1-0.08) or 8.3 t/d.

Revised Emission Reduction Estimate (if developed):

With the January 1, 2005 compliance date delayed, this amendment results in a delay in emission reductions compared with the 1999 rule amendment. NOx emission reductions foregone are 0.4 tons/day in 2006 and 0.1 tons/day in 2010. However, compared with the previous revision, NOx emission reductions from this source category are greater in 2015 by 0.6 tons/day. The emission reductions submitted for this amendment include a reduction of 0.14 tons/day from projects funded by the rule's mitigation fee and an 8% reduction off of baseline emissions due to a new Department of Energy efficiency standard starting in 2004. Including these credits, the amended rule will result in NOx reductions of 1.0 tons/day in 2006, 4.4 tons/day in 2010 and 8.9 tons/day in 2015 from the baseline emissions used for the February 2000 revision. Additionally, further reductions will be achieved through the mitigation fee for the interim emission limit in the rule.

The ending control factor for the rule is the same as for the 1999 amendment, but the baseline is revised due to new DOE efficiency requirement. In 2015, the rule results in a 75% reduction in NOx for the 10 ng/J final emission limit compared to 40 ng/J. This 75% reduction in NOx is applied to a revised 2015 baseline of 11.0 tons/day X (1 - 0.08) or 10.12 tons/day. Additional reductions are achieved through projects funded by the mitigation fees for the interim emission limit.

*Note that the district's input to the Rule Evaluation Form will not be used as input to the ARB's emission forecasting and planning.*

**III. SOURCES/ATTAINMENT STATUS**

District is:  Attainment  Nonattainment  Split

Approximate Total Number of Small (<100 TPY) Sources Affected by this Amendment: N/A

Percent in Nonattainment Area: N/A

Number of Large ( $\geq$  100 TPY) Sources Controlled: N/A Percent in Nonattainment Area: N/A

Name(s) and Location(s) (city and county) of Large ( $\geq$  100 TPY) Sources Controlled by Rule (*Attach additional sheets as necessary*): N/A

**IV. EMISSION REDUCTION TECHNOLOGY**

Does the Rule Include Emission Limits that are Continuous?  Yes  No

If Yes, Those Limits are in Section(s) (c) of the Rule.

Other Methods in the Rule for Achieving Emission Reductions are: Mitigation fee program for interim emission limit

**V. OTHER REQUIREMENTS**

The Rule Contains:

Emission Limits in Section(s): (c) Work Practice Standards in Section(s): None Specified

Recordkeeping Requirements in Section(s): (d), (e), (f) Reporting Requirements in Section(s): (d), (e), (f)

**APCD/AQMD RULE EVALUATION FORM - Page 3**  
(Electronic Format)

**VI. IMPACT ON AIR QUALITY PLAN**

No Impact       Impacts RFP       Impacts attainment

Discussion: The 2003 AQMP attainment demonstration and State Implementation Plan (SIP) commitment will not be compromised because the 2003 AQMP included a three ton set aside to account for delays in implementation when technical assessments for rules indicate that technology did not develop as anticipated. A portion of those emissions will be used to offset reductions that would have occurred if the technology was available and the January 1, 2005 compliance date could be met.

**Table 1 - Future Year Control Profile for 2004 Amendment of Rule 1121 (tons/day)**

	2004	2005	2006	2007	2008	2009	2010*	2011	2012	2013	2014	2015
<b>Baseline Inventory (tons/day)</b>	9.0	9.1	<b>9.2</b>	9.4	9.6	9.8	<b>10.0</b>	10.2	10.4	10.6	10.8	11.0
<b>Reduction - Mitigation Fee **</b>			0.03	0.15	0.19	0.19	0.19	0.19	0.19	0.16	0.11	
<b>Reduction 10 ng/J &amp; DOE ***</b>	< 0.1	0.1	0.9	1.6	2.5	3.3	4.2	5.1	6.1	7.1	8.0	8.9
<b>Total Reductions</b>	< 0.1	0.1	<b>0.9</b>	<b>1.8</b>	<b>2.7</b>	<b>3.5</b>	<b>4.4</b>	<b>5.3</b>	<b>6.3</b>	<b>7.3</b>	<b>8.1</b>	<b>8.9</b>
<b>Remaining</b>	8.9	9.0	<b>8.3</b>	<b>7.6</b>	<b>6.9</b>	<b>6.3</b>	<b>5.6</b>	<b>4.9</b>	<b>4.1</b>	<b>3.3</b>	<b>2.7</b>	<b>2.1</b>
<b>Overall Control Efficiency</b>	1%	1%	<b>10%</b>	<b>19%</b>	<b>28%</b>	<b>36%</b>	<b>44%</b>	<b>52%</b>	<b>61%</b>	<b>69%</b>	<b>75%</b>	<b>81%</b>

\* The 1997/1999 SIP Equivalent Emission Reductions in 2010 for the 1999 and 2004 rule amendments are as follows:

1999 Rule and CM#99 CMB-06 Emissions  
 2010 Baseline for Control Measure = 14 TPD  
 Rule Reduction (2/2000 submittal) = 8.2 TPD  
 Remaining = 5.8 TPD

2004 amendment remaining emissions = 5.6 TPD  
 Therefore the 1997/1999 SIP equivalent reduction is:  
 = 14.0 - 5.6 TPD  
 = 8.4 TPD equivalent reduction

\*\* Mitigation fee projects have a typical lifetime of seven to ten years.

\*\*\* The baseline emissions inventory and growth assumptions are from the 1999 rule amendment. The rule reductions are based on the NOx emissions standard for each year and a 10 year operating life (10% of the water heaters are replaced each year - when they are 10 years old). The new DOE efficiency standard results in about 8% less fuel used and 8% less NOx emissions per water heater.

**Table 2 - Future Year Control Profile for 1999 Amendment of Rule 1121 (tons/day)**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Baseline Inventory (tons/day)</b>	9.0	9.1	<b>9.2</b>	9.4	9.6	9.8	<b>10.0</b>	10.2	10.4	10.6	10.8	11.0
<b>Reduction - Interim Limit *</b>												
<b>Reduction (10 ng/J)</b>		0.8	1.4	2.2	2.9	3.7	4.5	5.4	6.3	7.2	8.1	8.3
<b>Total Reductions</b>	0.0	0.8	<b>1.4</b>	<b>2.2</b>	<b>2.9</b>	<b>3.7</b>	<b>4.5</b>	<b>5.4</b>	<b>6.3</b>	<b>7.2</b>	<b>8.1</b>	<b>8.3</b>
<b>Remaining</b>	9.0	8.3	<b>7.7</b>	<b>7.2</b>	<b>6.7</b>	<b>6.1</b>	<b>5.5</b>	<b>4.8</b>	<b>4.1</b>	<b>3.4</b>	<b>2.7</b>	<b>2.8</b>
<b>Overall Control Efficiency</b>	0%	8%	<b>16%</b>	<b>23%</b>	<b>31%</b>	<b>38%</b>	<b>45%</b>	<b>53%</b>	<b>60%</b>	<b>68%</b>	<b>75%</b>	<b>75%</b>

\* No credit was taken for emission reductions due to interim limit in February 2000 SIP amendment.

**Table 3 - 1997 AQMP CMB-06**

	1993	1998	2003	2004	2006	2010	2013	2014	2015
<b>Inventory (ton/day)</b>	<b>11.4</b>	12.1	12.7	12.8	<b>13.1</b>	<b>14.0</b>	14.7	14.9	15.1
<b>Reduction (ton/day)</b>					<b>3.6</b>	<b>7.6</b>			
<b>Remaining</b>					9.5	6.4			
<b>Growth and CEC Factor (1998 Based)</b>			1.05	1.06	1.09	1.16	1.22	1.24	1.25

Note: Linear Equation - ton/day = (0.1304 \* year) - 248.4769 using 1993 and 2006 data points  
 and Linear Equation - ton/day = (0.2250 \* year) - 438.25 using 2006 and 2010 data points



**SUMMARY  
MINUTES OF THE BOARD OF THE  
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

SAUNDRA McDANIEL, CLERK OF THE BOARD

**FRIDAY, SEPTEMBER 3, 2004**

Notice having been duly given, the regular meeting of the South Coast Air Quality Management District Board was held at District Headquarters, 21865 Copley Drive, Diamond Bar, California. Members present:

William A. Burke, Ed.D., Chairman  
Speaker of the Assembly Appointee

Supervisor S. Roy Wilson, Ed.D. Vice Chairman  
County of Riverside

Supervisor Michael D. Antonovich (arrived at 10:15 a.m.)  
County of Los Angeles

Councilmember William S. Craycraft (arrived at 9:20 a.m.)  
Cities of Orange County

Mayor Beatrice J. S. LaPisto-Kirtley  
Cities of Los Angeles County - Eastern Region

Mayor Ronald O. Loveridge  
Cities of Riverside County

Councilmember Jan Perry (left at 11:05 a.m.)  
Cities of Los Angeles County – Western Region

Ms. Cynthia Verdugo-Peralta  
Governor's Appointee

Supervisor James W. Silva (arrived at 9:20 a.m.)  
County of Orange

Councilmember Dennis R. Yates  
Cities of San Bernardino County

**Members Absent:**

Ms. Jane W. Carney  
Senate Rules Committee Appointee

Supervisor Bill Postmus  
County of San Bernardino

## CALL

- Pledge of Allegiance. Led by Mr. Loveridge
- Opening Comments

Dr. Barry R. Wallerstein, Executive Officer. Announced that: 1) an article on potential County cancer pockets appeared in the *Los Angeles Times* and that the Health Effects Officer would be providing the Board with a summary memo based on a new book by Dr. Mack of USC on the implications related to air pollution; 2) staff recommended Agenda Item No. 6 be pulled from the Consent Calendar and considered by the Board along with Agenda Item 29 under the Board Calendar; and 3) staff provided an addendum to Agenda Item 18 (*Annual Report on AB 2766 Funds from Motor Vehicle Registration Fees for FY 2002-03*) based on a request at the Mobile Sources Committee meeting that CARB amend its guidelines for local government expenditures.

(Mr. Craycraft and Mr. Silva arrived at 9:20 a.m.)

## CLOSED SESSION

The Board recessed to closed session at 9:15 a.m., pursuant to Government Code section 54956.9(a) to confer with its counsel regarding pending litigation which has been initiated formally and to which the District is a party. The actions are: Engine Manufacturers Association, et al. v. SCAQMD, et al., U.S. Supreme Court Case No. 02-1343; and People of the State of California ex rel SCAQMD v. BP West Coast Products, LLC, et al., Los Angeles Superior Court Case No. BC291876.

The Board reconvened at 10:15 a.m. District Counsel Barbara Baird announced that the Board took no reportable action in closed session.

(Mr. Antonovich arrived at 10:15 a.m.)

## CONSENT CALENDAR

- 1 Minutes of August 6, 2004 Board Meeting
- 2 Set Public Hearing October 1, 2004 to Amend Rule 1122 – Solvent Degreasers
- 3 Execute Sole-Source Contract for Three-Year Maintenance and Service Agreement for AQMD Headquarters' Energy Management System
- 4 Authorize Final Payments on Completed Contracts with Closed Accounts

5. Issue RFP for Technical Assistance for Advanced, Low- and Zero-Emission Mobile and Stationary Source Pollution Control Technologies
6. Issue Program Announcement & Application for New CNG School Buses with Funding from State's Proposition 40, EPA and Chairman's Modified School Bus Initiative and Installation of Oxidation Catalysts with Funding from U.S. EPA
7. Approve Expenditures for Activities and Projects Selected by California Natural Gas Vehicle Partnership During FY 2004-05 and Reallocate Budget for FY 2003-04
8. Recognize Funds from Other California Air Pollution Control Districts and Air Quality Management Districts for Current Upgrade to URBEMIS2002 Model and Appropriate Funds to FY 2004-05 Budget
9. Recognize and Appropriate U.S. EPA Pollution Prevention Grant Funds for Lubricant and Rust Inhibitor Study
10. Appropriate Funds from Designation for Litigation & Enforcement to District Counsel's FY 2004-05 Budget and Amend Contracts to Expend These Funds
11. Extend Contracts and Issue RFP for Legislative Representation in Sacramento, California
12. Issue RFP for Legislative Representation in Washington, D.C.
13. Public Affairs Report
14. Hearing Board Report
15. Civil Filing and Civil Penalties Report
16. Lead Agency Projects and Environmental Documents Received by AQMD
17. Rule and Control Measure Forecast
18. Annual Report on AB 2766 Funds from Motor Vehicle Registration Fees for FY 2002-03
19. Summary of Changes to FY 2003-04 Approved Budget
20. Status Report on Major Projects for Information Management Scheduled to Start During First Six Months of FY 2004-05

Agenda Item 11 was withheld for discussion. Mr. Yates indicated he would abstain on Item #7 because he received a campaign contribution. Mr. Antonovich indicated he would abstain on Item No. 7 due to a conflict of interest. Chairman Burke indicated he would abstain on Item #4 because Southern California Gas is a source of income and on Item #7 because American Honda is a source of income. Ms. LaPisto-Kirtley disclosed that one of the grant recipients under Item 29 is her employer, the Los Angeles Unified School District, but she had been advised by District Counsel that she could participate because a government exception to the conflict of interest rule applies.

DR. WILSON MOVED APPROVAL OF AGENDA ITEMS 1 THROUGH 5, 7 THROUGH 10, AND 12 THROUGH 20, AS RECOMMENDED BY STAFF, WITH THE FOLLOWING MODIFICATION TO THE RECOMMENDED ACTION ON ITEM 18:

"2. *Direct staff to request that CARB establish a guideline requiring local government staff to highlight proposed AB 2766 expenditures to the City Council/Board of Supervisor level during their annual budget approval process.*"

THE MOTION WAS SECONDED BY MS. LaPISTO-KIRTLEY, AND CARRIED BY THE FOLLOWING VOTE: \_\_\_\_\_

AYES: Antonovich [except Item 7], Burke [except Items 4 & 7], Craycraft, LaPisto-Kirtley, Loveridge, Perry, Silva, Verdugo-Peralta, Wilson, and Yates [except Item 7].

NOES: None.

ABSTAIN Antonovich and Yates [on Item 7 only], Burke [on Items 4 & 7 only].

ABSENT: Carney and Postmus.

21 Items Deferred from Consent Calendar

- 11 Extend Contracts and Issue RFP for Legislative Representation in Sacramento, California

Noting the deficit to the AQMD's General Fund, Mr. Yates recommended that the Board release the RFP and choose one advocate to represent the District.

Dr. Wallerstein noted the success that the District achieved since Senator Polanco and Mr. Lind were brought aboard to provide strategic advice and lobbying. The proposal is to approve a one year extension with Richard Polanco and Allan Lind in their current contracts and to release RFP to solicit proposals for additional legislative representation in Sacramento.

Ms. Verdugo-Peralta and Ms. La Pisto-Kirtley noted the valuable services that Senator Polanco and Mr. Lind provide to the AQMD.

ON MOTION OF MS. LaPISTO-KIRTLEY, SECONDED BY DR. WILSON, THE BOARD APPROVED AGENDA ITEM NO. 11, AS RECOMMENDED BY STAFF, BY THE FOLLOWING VOTE:

AYES Antonovich, Burke, Craycraft, LaPisto-Kirtley, Loveridge, Perry, Silva, Verdugo-Peralta, and Wilson.

NOES: Yates.

ABSENT: Carney and Postmus.

### **BOARD CALENDAR**

22. Administrative Committee

23. Legislative Committee

Mobile Source Committee

25. Stationary Source Committee

26. Technology Committee

Mobile Source Air Pollution Reduction Review Committee

California Air Resources Board Monthly

ON MOTION OF MS. LaPISTO-KIRTLEY, SECONDED BY MS. VERDUGO-PERALTA, AND UNANIMOUSLY CARRIED (Absent: Carney and Postmus), THE BOARD RECEIVED AND FILED AGENDA ITEMS 22 THROUGH 28, AS RECOMMENDED BY STAFF.

6. Issue Program Announcement & Application for New CNG School Buses with Funding from State's Proposition 40, EPA and Chairman's Modified School Bus Initiative and Installation of Oxidation Catalysts with Funding from U.S. EPA
29. Approve Grants to Retrofit Diesel School Buses with Particulate Traps, Purchase Cleaning Equipment Systems and Install Insulation Blankets; Issue New Program Announcement and Application for Retrofit of School Buses with Particulate Traps and Insulation Blankets; and Consider Changes to Implementation Procedures of Chairman's Initiative on Lower-Emission School Bus Program to Allow Transfer of Funds from School Bus Replacement Component to School Bus Retrofit Component

Fred Minassian, Planning & Rules Manager/Science & Technology Advancement, gave the staff report for Agenda Items 6 and 29. The fourth item under staff's recommended actions for Agenda Item 29 initially presented two options for the Board's consideration:

**Option 1, Allocation within Initial Funding**

or

**Option 2, Reissue Program Announcement with Cost Share**

In response to public comments presented at the August 27, 2004 Technology Committee meeting, the item was revised to include a third option for the Board's consideration:

**Option 3, Fund Transfer from School Bus Replacement in School Bus Retrofit.**

Staff recommended that the Board elect Option 2.

An addendum sheet to Agenda Item No. 29 was distributed by staff to Board members and copies were made available to the public. The addendum, **Private School Bus Operator's Cost-Share Information**, was inserted as the last page of Attachment 1 to Program Announcement & Application #PA 2005-04.

The following individuals addressed the Board to comment on Items 6 and 29.

**RICK BENFIELD, Tumbleweed Transportation**

Expressed support for Option No. 3; and noted that everyone wants cleaner air by reducing exhaust emissions, and to reduce children's exposure to harmful emissions from school buses. (Submitted written comments)

RICK FEINSTEIN, Colton Joint Unified School District  
JULIE MASTERS, National Resources Defense Council  
TODD CAMPBELL, Coalition for Clean Air  
ROBERT VAN DRIEL, First Student Inc.

Expressed support for Option No. 2; noting that it would result in the greatest number of clean school buses; and commented that public school bus fleets should have priority for public funding over private fleets which operate on profit.

DAN CHADD, A-Z Bus Sales

Noted that in an effort to assist the AQMD in meeting its goals, A-Z Bus Sales forwarded to staff its pricing structures for PM traps.

RON SMITH, Lake Elsinore Unified School District

Expressed support for Agenda Item No. 6; opposed Option No. 3 for Agenda Item No. 29, expressing a preference that all the money go to school buses and infrastructure; and read a statement from Darren Water, Assistant Superintendent for Business Services for Lake Elsinore, urging the Board not to take away funds to replace school buses, and to further review offset infrastructure costs for public schools.

ON MOTION OF DR. WILSON, SECONDED BY MS. LaPISTO-KIRTLEY, AND UNANIMOUSLY CARRIED (Absent: Carney and Postmus), THE BOARD APPROVED AGENDA ITEMS 6 AND 29, ELECTING OPTION NO. 2, REISSUE PROGRAM ANNOUNCEMENT WITH COST SHARE, AS RECOMMENDED BY STAFF, WITH THE MODIFICATION TO ITEM 29 TO INCLUDE THE ADDENDUM TO PA #2005-04, PRIVATE SCHOOL BUS OPERATOR'S COST-SHARE INFORMATION.

Ms. LaPisto-Kirtley requested that staff seek additional funding for infrastructure; and to continue to provide the cost differential and assistance to school districts for CNG buses.

PUBLIC HEARINGS

30. Amend Rule 1121 - Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters

Staff waived the oral report on Agenda Item No. 30. The public hearing was opened, and the Board heard testimony from the following individual.

DAVID SUTULA, Gas Appliance Manufacturers Association (GAMA)

Expressed support for a delay, noting that the water heater manufacturers did not have sufficient opportunity to research and develop the technologies needed to meet the 10 nanograms-per-joule limit; and requested that the Board consider an exemption for power- and direct-vent units.

Jill Whynot, Planning & Rules Manager/Planning, Rule Development, and Area Sources, noted that staff proposed a three-year delay of the rule's limits. Staff will continue to work with industry, and will provide a progress report to the Board nine months before the compliance date.

There being no further public testimony, the public hearing was closed

ON MOTION OF MS. LaPISTO-KIRTLEY, DULY SECONDED, AND UNANIMOUSLY CARRIED (Absent: Carney and Postmus), THE BOARD ADOPTED RESOLUTION NO. 04-25, AMENDING RULE 1121 AND CERTIFYING THE FINAL SUBSEQUENT ENVIRONMENTAL ASSESSMENT, AS RECOMMENDED BY STAFF.

31 Amend Rule 2007 - Trading Requirements

Ms. Verdugo-Peralta announced that she was advised by District Counsel to recuse herself and leave the dais during testimony on Agenda Item No. 31 due to her husband's employment with Southern California Edison.

Elaine Chang, DEO of Planning, Rule Development, and Area Sources, gave the staff report. The public hearing was opened, and the Board heard testimony from the following individual.

BILL QUINN, California Council for Environmental & Economic Balance (CCEEB)

Expressed support for the staff proposal to limit power generators from trading privileges until the Board votes on the other RECLAIM rule amendments, currently scheduled for November 2004; and opposed any further delay beyond that in allowing power generators full trading privileges.

Written Comments Submitted by:  
California Air Resources Board

There being no further public testimony, the public hearing was closed.

ON MOTION OF MS. LaPISTO-KIRTLEY, SECONDED BY MR. YATES, AND UNANIMOUSLY CARRIED (Absent: Carney, Postmus, and Verdugo-Peralta), THE BOARD ADOPTED RESOLUTION NO. 04-26, AMENDING RULE 2007 AND CERTIFYING THE NOTICE OF EXEMPTION, AS RECOMMENDED BY STAFF.

32. Informational Hearing and White Paper for Proposed Amendments to RECLAIM AGENDA ITEM NO. 32 WAS CONTINUED TO THE OCTOBER 1, 2004 BOARD MEETING, AS RECOMMENDED BY STAFF.

(Ms. Perry left at 11:05 a.m.)

33. Receive Evaluation Report on Emissions from Flaring Operations at Refineries and Direct Staff to Initiate Amendment to Rule 1118

Carol Coy, DEO of Engineering & Compliance, gave the staff report. The public hearing was opened, and the Board heard testimony from the following individuals.

TODD CAMPBELL, Coalition for Clean Air

Noted that it is prudent to move forward with a fair approach through the working group to address the situation; and requested that the Board support staff's recommendation.

JUAN CARLOS PICENO

AGUSTIN EICHWALD

CAROL PICENO

MARIA QUINTERO, Communities for a Better Environment (CBE)

1) Urged the Board to strengthen the rules for refinery flaring operations and eliminate non-emergency flares. 2) Noted that self-monitoring results in underestimated numbers; and that the air in the Wilmington community is being contaminated by the flares.

CAROLIN A. KEITH, ExxonMobil and Western States Petroleum Association

JOE SPARANO, Western States Petroleum Association (WSPA)

Noted that flares ensure safe operations at the facilities; the refineries have reported significant reductions in emissions from flares during the past two years, and that methods for potential emission reductions are not universally applicable. Requested that rather than approving the commencement of rulemaking, the Board direct staff to work with industry under the auspices of the District's Refinery Committee.

Mr. Craycraft noted that all parties are willing to continue working on improving the emissions from flare systems; that progress has been made at the refineries; concern has been shown to the communities affected by flares; and that cooperative monitoring between industry and the District is a positive process during the rule development period.

Ms. Verdugo-Peralta expressed her appreciation to the refineries that have reduced the amount of flares that have occurred; and noted that the concerns of the affected communities must be recognized, and that the District has the responsibility to make sure the health of the community members are not adversely affected.

JULIE MASTERS, National Resources Defense Council (NRDC)

Expressed full support of staff's study and recommendations, and the comments made by the Coalition for Clean Air and the affected members of the public.

There being no further public testimony, the public hearing was closed

Dr. Wallerstein confirmed that staff would work cooperatively with the refiners through the Refinery Committee and the rulemaking process; and that staff would closely watch and interact with the Bay Area AQMD, which is currently in the rule making process on this subject.

ON MOTION OF MS. VERDUGO-PERALTA, SECONDED BY DR. WILSON, AND UNANIMOUSLY CARRIED (Absent: Carney, Perry, and Postmus), THE BOARD RECEIVED THE REPORT AND DIRECTED STAFF TO INITIATE AMENDMENT OF RULE 1118 BASED ON THE EVALUATION REPORT OF EMISSIONS FROM FLARING OPERATIONS AT REFINERIES, AS RECOMMENDED BY STAFF.

OTHER BUSINESS – NONE

PUBLIC COMMENT PERIOD - (Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3)

DUNCAN McKEE

Noted that the agencies in the Los Angeles County do not communicate amongst each other; that there is a lack of cooperation; and his concern is allowing a facility to burn plastic and rubber.

Chairman Burke directed District Prosecutor Peter Mieras to address Mr. McKee's concerns.

---

**ADJOURNMENT**

There being no further business, the meeting was adjourned by Chairman Burke at 11:55 a.m.

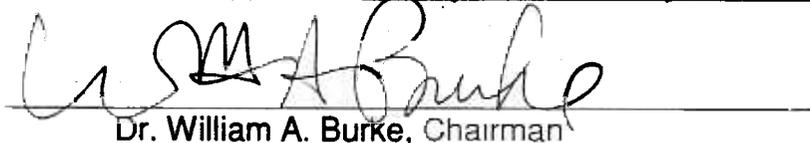
The foregoing is a true statement of the proceedings held by the South Coast Air Quality Management District Board on September 3, 2004.

Respectfully Submitted,



ROSE JUAREZ  
Senior Deputy Clerk

Date Minutes Approved: 10-1-04



Dr. William A. Burke, Chairman

---

**ACRONYMS**

CARB = California Air Resources Board

CNG = Compressed Natural Gas

FY = Fiscal Year

RFP = Request for Proposals

## ATTACHMENT E

RESOLUTION NO. 04- \_\_\_\_\_

**A Resolution of the Governing Board of the South Coast Air Quality Management District (AQMD) certifying the Final Subsequent Environmental Assessment for Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural-Gas Fired Water Heaters.**

**A Resolution of the AQMD Governing Board amending Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters.**

**WHEREAS**, the AQMD Governing Board has determined with certainty that the Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural-Gas Fired Water Heaters, is a “project” pursuant to the terms of the California Environmental Quality Act (CEQA); and

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

**WHEREAS**, AQMD staff prepared a Draft Subsequent Environmental Assessment (SEA) pursuant to its certified regulatory program and state CEQA Guidelines §15252 setting forth the potential environmental consequences of Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural-Gas Fired Water Heaters; and

**WHEREAS**, the Draft SEA was circulated for a 45-day public review and comment period from June 5, 2004 to July 20, 2004, no comments were received, and a Final SEA has been prepared; and

**WHEREAS**, it is necessary that the adequacy of the Final SEA be determined by the AQMD Governing Board prior to its certification; and

**WHEREAS**, California Health and Safety Code §40727 requires that prior to adopting, amending or repealing a rule or regulation, the AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report; and

**WHEREAS**, the AQMD Governing Board has determined that a need exists to adopt the Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters to allow more time to develop water heaters that can meet the rule limits; and

**WHEREAS**, the AQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from §§ 39002, 40000, 40001, 40440, 40441, 40702, 40725 through 40728, 41508, and 41700 of the California Health and Safety Code; and

**WHEREAS**, the AQMD Governing Board has determined that Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters, as proposed to be amended is written or displayed so that its meaning can be easily understood by the persons directly affected by it; and

**WHEREAS**, the AQMD Governing Board has determined that Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters, as proposed to be amended is in harmony with, and not in conflict with or contradictory to, existing federal or state statutes, court decisions, or regulations; and

**WHEREAS**, the AQMD Governing Board has determined that Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters, as proposed to be amended does not impose the same requirements as any existing state or federal regulation and the proposed rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the District; and

**WHEREAS**, the AQMD Governing Board has determined that Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters, as proposed to be amended, references the following statutes which the AQMD hereby implements, interprets or makes specific: Health and Safety Code 40001(a) (rules to meet air quality standards); 40440(a) (rules to carry out the plan); 40702 (adoption of rules and regulations); and

**WHEREAS**, Health and Safety Code §40727.2 requires the AQMD to prepare a written analysis of existing federal air pollution control requirements applicable to the same source type being regulated whenever it adopts, or amends a rule, such that the AQMD's analysis of Proposed Amended Rule 1121 is included in the staff report; and

**WHEREAS**, the AQMD Governing Board has determined that the socioeconomic impact assessment of the Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters is consistent with the Governing Board March 17, 1989 and October 14, 1994 Board Socioeconomic Resolutions for rule adoption; and

**WHEREAS**, the AQMD Governing Board has determined that the socioeconomic impact assessment of the Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters is consistent with the provisions of Health and Safety Code §§ 40440.5, 40440.8 and 40728.5; and

**WHEREAS**, staff has determined that Proposed Amended Rule 1121 will not have a negative cost impact because the proposed rule allows for compliance with the current interim limit by January 1, 2005 or an extension of the deadline provided that a mitigation fee is paid in lieu of compliance with the interim limit; and

**WHEREAS**, the AQMD Governing Board has reviewed and considered the staff's findings related to cost impacts of Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters set forth in the socioeconomic impact assessment made public with the agenda package for this meeting, and hereby finds and determines that cost impacts are as set forth in that assessment; and

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

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

**WHEREAS**, the AQMD Governing Board has held a public hearing in accordance with all provisions of law;

**WHEREAS**, the AQMD Governing Board specifies the Manager of Proposed Amended Rule 1121 - Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of this proposed project is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

**NOW, THEREFORE, BE IT RESOLVED**, that the AQMD Governing Board hereby certifies, pursuant to the authority granted by law, the Final SEA for Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters; and

**BE IT FURTHER RESOLVED**, that the AQMD Governing Board does hereby adopt a Statement of Findings and Statement of Overriding Considerations pursuant to state CEQA Guidelines §§15091 and 15093,

respectively, which are included in Attachment 1, attached and incorporated herein by reference; and

**BE IT FURTHER RESOLVED**, that the AQMD Governing Board does hereby make a finding of infeasibility with regard to the January 1, 2005 compliance date for the final emission limit for Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters; and

**BE IT FURTHER RESOLVED**, that the AQMD Governing Board does hereby amend, pursuant to the authority granted by law, Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters, as set forth in the attached and incorporated herein by reference.

Dated: \_\_\_\_\_

\_\_\_\_\_  
Clerk of the District Board

# **SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

## **Attachment 1 to the Governing Board Resolution for Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters**

### **Statement of Findings and Statement of Overriding Considerations**

**August 2004**

**SCAQMD No. 080604KCS**

#### **Executive Officer**

Barry R. Wallerstein, D.Env.

#### **Deputy Executive Officer**

**Planning, Rule Development, and Area Sources**

Elaine Chang, DrPH

#### **Assistant Deputy Executive Officer**

**Planning, Rules, and Area Sources**

Laki Tisopoulos, Ph.D, P.E.

#### **Planning and Rules Manager**

**CEQA and Socioeconomic Analysis**

Susan Nakamura

---

**Author:** Kathy C. Stevens      Air Quality Specialist, CEQA

**Reviewed by:** Steve Smith, Ph.D.      Program Supervisor, CEQA  
William Wong      Senior Deputy District Counsel

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
GOVERNING BOARD**

**CHAIRMAN:** WILLIAM A. BURKE, Ed.D.  
Speaker of the Assembly Appointee

**VICE CHAIRMAN:** S. ROY WILSON, Ed.D.  
Supervisor, Fourth District  
Riverside County Representative

**MEMBERS:**

MICHAEL D. ANTONOVICH  
Supervisor, Fifth District  
Los Angeles County Representative

JANE W. CARNEY  
Senate Rules Committee Appointee

WILLIAM CRAYCRAFT  
Councilmember, City of Mission Viejo  
Cities Representative, Orange County

BEATRICE J.S. LAPISTO-KIRTLEY  
Mayor, City of Bradbury  
Cities Representative, Los Angeles County, Eastern Region

RONALD O. LOVERIDGE  
Mayor, City of Riverside  
Cities Representative, Riverside County

JAN PERRY  
Councilmember, City of Los Angeles  
Cities Representative, Los Angeles County, Western Region

BILL POSTMUS  
Supervisor, First District  
San Bernardino County Representative

JAMES SILVA  
Supervisor, Second District  
Orange County Representative

CYNTHIA VERDUGO-PERALTA  
Governor's Appointee

DENNIS YATES  
Councilmember, City of Chino  
Cities Representative, San Bernardino County

**EXECUTIVE OFFICER:**

BARRY R. WALLERSTEIN, D.Env.

## **INTRODUCTION**

Proposed amended Rule 1121 – Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters, is a “project” as defined by the California Environmental Quality Act (CEQA) (California Public Resources Code §§21000 et seq.). The South Coast Air Quality Management District (SCAQMD) is the lead agency for the proposed project and, therefore, has prepared a Subsequent Environmental Assessment (SEA) pursuant to CEQA Guidelines §15162(a)(1) and SCAQMD Rule 110. The purpose of the SEA is to describe the proposed project and to identify, analyze, and evaluate any potentially significant adverse environmental impacts that may result from adopting and implementing the proposed project.

The Draft SEA for the proposed amendments to Rule 1121 was prepared and circulated for a 45-day public review and comment period from June 4, 2004 to July 20, 2004. No comments were received during the public review period.

## **SUMMARY OF THE PROPOSED PROJECT**

Rule 1121 currently requires specific NO<sub>x</sub> emission limits for all new residential water heaters with heat input less than 75,000 British thermal units (Btu) per hour. The NO<sub>x</sub> compliance limits are:

- An interim requirement of 20 ng/J; and
- A final requirement of 10 ng/J.

Rule 1121 also includes an alternative compliance option which allows manufacturers to pay mitigation fees in lieu of meeting the interim rule requirement of 20 ng/J. The intent of the mitigation fees is to fund air quality emission reduction projects to achieve NO<sub>x</sub> emission reductions equivalent to what would have been achieved upon meeting the interim rule requirements.

The proposed amendments to Rule 1121 primarily extend the final requirement compliance dates based on water heater capacity. For example, for water heaters less than or equal to 50 gallons, the compliance date is extended to January 1, 2006; for water heaters greater than 50 gallons, the compliance date is extended to January 1, 2007; and for direct-vent, power-vent and power direct-vent water heaters, the compliance date is January 1, 2008.

The proposed amendments to Rule 1121 also include definitions of words and acronyms intended to clarify the language in the rule; revisions to the mitigation fee program and require a final progress report for direct-vent, power-vent and power direct-vented water heaters.

## **SIGNIFICANT ADVERSE IMPACTS THAT CANNOT BE REDUCED BELOW A SIGNIFICANT LEVEL**

The SEA identified “air quality” as the only area that may be significantly adversely affected by the proposed project. The SEA identified delayed NO<sub>x</sub> emission reductions as a result of extending the final NO<sub>x</sub> emission limit compliance date an operational air quality

impact. The SEA also included information regarding the progress of the Mitigation Fee Program in reducing NOx emissions.

- **EXTEND FINAL EMISSION LIMIT COMPLIANCE DATE** – Extending the final NOx emission limit compliance date to January 1, 2006 for water heaters less than or equal to 50 gallons, to January 1, 2007 for water heaters greater than 50 gallons is expected to result in a delay in anticipated NOx emission reductions, and to January 1, 2008 for direct-vent, power-vent and power direct-vent water heaters.
- **DELAYED MITIGATION FEE PROGRAM REDUCTIONS** – Existing Rule 1121 contains a mitigation fee program as an alternative option for complying with the interim emission limits by July 1, 2002. The mitigation fee program allows a manufacturer to pay mitigation fees in lieu of complying with the 20 ng/J NOx limit. The mitigation fees collected by the SCAQMD from water heater manufacturers are placed in a restricted account and used to fund air quality projects to achieve NOx emission reductions equivalent to what would have been achieved upon meeting the interim rule requirements. As a conservative “worst-case” analysis, the SEA concluded that the mitigation fees collected did not provide sufficient funding to obtain equivalent NOx emission reductions. This conclusion is considered a “worst-case” analysis because existing Rule 1121 includes a mitigation fee option. Inherent in this option is that all anticipated NOx emission reductions would be achieved by complying with the interim compliance requirement. Further, the mitigation fee program is not designed to achieve equivalent NOx emission reductions the year the fees are collected. It is understood that there is an inherent delay between the collection of mitigation fees and the emission reductions that occur from funded projects. Over the life of the funded projects, more emission reductions will be realized, or may be exceeded, although not necessarily during the same year as the mitigation fee payment. This is allowed under the existing rule.

The air quality impacts from implementing the proposed project (e.g. delaying the final compliance dates), are shown in Table 1. The emissions inventory used to analyze the project-specific impacts incorporate the new DOE energy efficiency requirements to maintain consistency with the Staff Report for PAR 1121, and the assumption that 10 percent of the existing water heaters are replaced each year. Table 2 shows the “worst-case” NOx emission reductions foregone as a result of the manufacturers choosing the mitigation fee option rather than complying with the interim limit of 20 ng/J, which is allowed under existing Rule 1121. Both individually and together, these two air quality effects exceed the SCAQMD’s daily significance threshold for NOx each year beginning in 2005 through the year 2014. Therefore, NOx emission reductions foregone are considered to be a significant adverse operational air quality impact.

**TABLE 1**  
**NO<sub>x</sub> EMISSION REDUCTIONS FOREGONE FROM DELAYING THE FINAL COMPLIANCE DATE**  
**(lbs/day)**

YEAR										
2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
-1,000	-800	-800	-600	-400	-200	-200	-200	Ø	Ø	Ø
<b>*SCAQMD operational significance threshold for NO<sub>x</sub> is 55 pounds per day</b>										

**TABLE 2**  
**NO<sub>x</sub> EMISSION REDUCTIONS FOREGONE<sup>(a)</sup> AS A RESULT OF THE MANUFACTURERS CHOOSING THE MITIGATION FEE OPTION**  
**(lbs/day)**

YEAR										
2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
-2,120 <sup>(b)</sup>	-2,120	-2,120	-2,120	-2,120	-2,120	-2,120	-1,320	Ø	Ø	Ø
<b>*SCAQMD operational significance threshold for NO<sub>x</sub> is 55 pounds per day.</b>										

- (a) NO<sub>x</sub> emission reductions foregone analyzed here are a “worst-case” conclusion because existing Rule 1121 currently allows manufacturers to participate in the mitigation fee program.
- (b) This amount reflects two and one half years of use of the mitigation fee program.

The current version of Rule 1121 allowed water heater manufacturers to either meet the interim emission limit of 20 ng/J or pay a mitigation fee to the SCAQMD to later fund NO<sub>x</sub> emission reduction programs. As a result, these mitigation fee programs would inherently have a lag time in achieving emission reductions. Over the life of these mitigation fee program projects, more emission reductions are realized, although not necessarily during the same year as the mitigation fee payment. The current Mitigation Fee Program has been funded by the water heater manufacturers at \$805,000 for a 15 month period from July 2002 to October 2003. During that period of time, an estimated 146 tons per year of emission reductions would have been achieved had the manufacturers fully complied with the interim limit. However, based on the anticipated \$5,400 per ton cost-effectiveness, the total equivalent amount of emissions reductions would be 149 tons.

In June 2004, the Governing Board approved funds of \$804,197 using the Rule 1121 Mitigation Fee Program for four projects which will have a life expectancy of well over 15 years and with annual emission reductions of 51 tons, starting in 2005.

These reductions during the lifetime expectancy for these projects alone would more than adequately recover the total 149 tons per year of emissions forgone.<sup>1</sup> Additional monies will still be accumulated until January 1, 2005, which would provide additional monies to purchase emission reductions to offset any forgone emissions. Also, since the mitigation fee program is proposed to be extended with an increase in the mitigation fee to reflect the current cost of reducing emissions from recent emission credit generation projects, further and more timely emission reductions are expected during the extended mitigation fee program. As with the existing mitigation fee program, the revised mitigation fee program may have a lag time before anticipated NOx emission reductions are achieved.

## STATEMENT OF FINDINGS

Public Resources Code §21081 and CEQA Guidelines §15091(a) state that no public agency shall approve or carry out a project for which a CEQA document has been completed which identifies one or more significant adverse environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. Additionally, the findings must be supported by substantial evidence in the record (CEQA Guidelines §15091(b)). As identified in the Final SEA the proposed project has the potential to create significant adverse operational air quality impacts due to NOx emission reductions foregone. The Governing Board, therefore, makes the following findings regarding the proposed project. The findings are supported by substantial evidence in the record as explained in each finding. This Statement of Findings will be included in the record of project approval and will also be noted in the Notice of Determination.

- **NOx emission reductions foregone from extending the final emission limit compliance date and the delayed emission reductions from the manufacturers choosing the existing mitigation fee option cannot be mitigated to insignificance.**

Finding and Explanation: The air quality analysis concludes that extending the final emission limit compliance date will cause NOx emission reductions forgone for each year beginning in 2005 through the year 2014. In 2015, actual NOx emission reductions will be realized and will no longer be foregone.

The emission reductions foregone include the effects of modifications to the proposed project made subsequent to the circulation of the Draft SEA for public review and comment. The proposed project was modified to exempt direct-vent, power-vent and power direct-vented water heaters (both less than or equal to a 50 gallon capacity and greater than a 50 gallon capacity) from the interim compliance emission limit of 20 ng/J until January 1, 2008. These water heaters comprise less than two percent of the total water heater market subject to this rule. This change from the Draft SEA to the final SEA does not alter the

---

<sup>1</sup> The 149 tons per 15-month period or 120 tons per year is based on an average natural gas usage of 190 therms per year. Based on the same average natural gas usage, the estimated annual emission reductions from reducing 10 percent of the water heater population from 40 ng/J to 20 ng/J is 146 tons per year (0.4 ton per day). The discrepancy between the 120 and 146 tons per year is due to the estimated number of water heaters assuming a 10 percent turnover rate used in the November 1999 Rule 1121 Staff Report and the projected number of water heaters to be sold provided by the manufacturers that participated in the mitigation fee program.

conclusion of “significant adverse air quality impacts” (due to emission reductions foregone) made in the Draft SEA nor does it trigger any conditions that require recirculation of the CEQA document pursuant to CEQA Guidelines §15088.5.

It should be noted that existing Rule 1121 currently allows water heater manufacturers to either meet the interim emission limit of 20 ng/J or pay a mitigation fee to the SCAQMD to later fund NO<sub>x</sub> emission reduction programs. Inherent in the mitigation fee option is the consideration that all anticipated NO<sub>x</sub> emission reductions from complying with the interim compliance limits may not be achieved. Further, the mitigation fee program by design would inherently have a lag time in achieving equivalent emission reductions. Over the life of mitigation fee program projects, more emission reductions are realized, although not necessarily during the same year as the mitigation fee payments. For example, the current Mitigation Fee Program has been funded by the water heater manufacturers at \$805,000 for a 15-month period from July 2002 to October 2003. Based on the anticipated \$5,400 per ton cost-effectiveness, the total equivalent amount of emission reductions would be 149 tons.

In June 2004, the Governing Board approved funds of \$804,197 using the Rule 1121 Mitigation Fee Program for four projects which will have a life expectancy of well over 15 years with annual emission reductions of 51 tons, starting in 2005. The emission reductions during the lifetime expectancy of these projects alone would more than adequately recover 149 tons of emissions, but not in 2002-2003 to offset the emissions foregone. Additional monies will continue to accumulate until January 1, 2005, which will provide additional monies to purchase emission reductions to offset any forgone emissions. Also, since the mitigation fee program is proposed to be extended with an increase in the mitigation fee to reflect the current cost of reducing emissions from recent emission credit generation projects, additional emission reductions are expected during the extended mitigation fee program.

The Governing Board finds that no feasible mitigation measures have been identified that will reduce to insignificance, the significant adverse NO<sub>x</sub> air quality impacts. CEQA Guidelines §15364 defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors."

The Governing Board finds further that the SEA considered project alternatives pursuant to CEQA Guidelines §15126.6, but did not identify an alternative which would reduce to insignificant levels the significant air quality impacts identified for the proposed project. Further the proposed project achieves the best balance of meeting rule objectives and providing manufacturers of residential type, natural gas-fired water heaters with greater compliance flexibility. The no project alternative will not meet the project goals of allowing manufacturers additional time to meet final NO<sub>x</sub> emissions limits because compliance by January 2005 is infeasible.

The Governing Board further finds that all of the findings presented in this “Statement of Findings” are supported by substantial evidence in the record.

The record of approval for this project may be found in the SCAQMD’s Clerk of the Board’s Office located at SCAQMD Headquarters in Diamond Bar, California.

## STATEMENT OF OVERRIDING CONSIDERATIONS

If significant adverse impacts of a proposed project remain after incorporating mitigation measures, or no measures or alternatives to mitigate the adverse impacts to less than significant levels are identified, the lead agency must make a determination that the benefits of the project outweigh the unavoidable adverse environmental effects if it is to approve the project. CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project (CEQA Guidelines §15093 (a)). If the specific economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered “acceptable” (CEQA Guidelines §15093 (a)). Accordingly, a Statement of Overriding Considerations regarding potentially significant adverse operational air quality impacts resulting from the proposed project has been prepared. This Statement of Overriding Considerations is included as part of the record of the project approval for the proposed project. Pursuant to CEQA Guidelines §15093(c), the Statement of Overriding Considerations will also be noted in the Notice of Determination for the proposed project.

Despite the inability to incorporate changes into the project that will mitigate potentially significant adverse air quality impacts to a level of insignificance, the SCAQMD's Governing Board finds that the following benefits and considerations outweigh the significant unavoidable adverse environmental impacts:

1. The analysis of potential adverse environmental impacts incorporates a “worst-case” approach. This entails the premise that whenever the analysis requires that assumptions be made, those assumptions that result in the greatest adverse impacts are typically chosen. This method may overestimate the actual adverse emission impacts resulting from the proposed project. In reality, the emission reductions foregone may be less than assumed in the Final SEA, resulting in lower NO<sub>x</sub> air quality impacts, especially with regard to the effects of the mitigation fee program because this provision is currently a provision in existing Rule 1121.
2. The long-term effect of PAR 1121, other SCAQMD rules and AQMP control measures is the reduction of emissions district-wide, contributing to attaining and maintaining the state and federal ambient air quality standards. PAR 1121 will continue to limit NO<sub>x</sub> emissions from residential type, natural gas-fired water heaters, albeit over a longer period of time, and not result in significant adverse cumulative air quality effects. The amendments to Rule 1121 will not increase NO<sub>x</sub> emissions, but rather will delay originally anticipated NO<sub>x</sub> emission reductions from sources subject to the rule. Additionally, PAR 1121 provides overall human health benefits by reducing criteria pollutant emissions from residential type, natural gas-fired water heaters over time.
3. Delaying implementation of the final emission limit of 10 ng/J is expected to provide additional time for the manufacturers to integrate new burner systems with new water heater designs to reduce NO<sub>x</sub> emissions. Allowing time for the manufacturers to resolve the technical issues associated with redesigning the water heaters will help ensure that

NOx emission reductions anticipated for the rule will occur. Compliance by January 2005 is infeasible so it is necessary to extend the final compliance dates.

4. Even assuming a “worst-case” scenario of NOx emission reductions foregone, this impact would decline over time as old water heaters are replaced with new units that comply with the 10 ng/J requirement.
5. In the settlement agreement for the 1999 AQMP amendment, a provision was included for findings of infeasibility in the event technology-forcing rules are not able to be met. The 2003 AQMP has a three ton per day set aside to account for the delay in emission reductions when technical assessments for rules indicate that technology did not develop as anticipated. As stated in the Draft staff report for PAR 1121, it is infeasible for manufacturers to meet the current final emission reduction limits by January 1, 2005.
6. PAR 1121 includes a provision to extend and increase the mitigation fee program to reflect the current cost of reducing emissions from recent emission generation projects. It is expected that this proposed provision will achieve additional NOx emission reductions in the future beyond what is expected to occur under the existing mitigation fee program.

The Governing Board finds that the above-described considerations outweigh the unavoidable significant effects to the environment as a result of the proposed project.

## **MITIGATION MONITORING PLAN**

When making findings as required by Public Resources Code §21081, the lead agency must adopt a reporting or monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment (Public Resources Code §21081.6 and CEQA Guidelines §15097).

During the evaluation of the proposed amendments to Rule 1121, no project-specific mitigation measures were identified that could reduce air quality impacts. As a result, the SCAQMD Governing Board finds that, in the case of PAR 1121, a Mitigation Monitoring Plan need not be prepared since no feasible mitigation measures have been identified.

**RESOLUTION NO. 04-25**

**A Resolution of the Governing Board of the South Coast Air Quality Management District (AQMD) certifying the Final Subsequent Environmental Assessment for Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural-Gas Fired Water Heaters.**

**A Resolution of the AQMD Governing Board amending Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters.**

**WHEREAS**, the AQMD Governing Board has determined with certainty that the Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural-Gas Fired Water Heaters, is a “project” pursuant to the terms of the California Environmental Quality Act (CEQA); and

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

**WHEREAS**, AQMD staff prepared a Draft Subsequent Environmental Assessment (SEA) pursuant to its certified regulatory program and state CEQA Guidelines §15252 setting forth the potential environmental consequences of Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural-Gas Fired Water Heaters; and

**WHEREAS**, the Draft SEA was circulated for a 45-day public review and comment period from June 5, 2004 to July 20, 2004, no comments were received, and a Final SEA has been prepared; and

**WHEREAS**, it is necessary that the adequacy of the Final SEA be determined by the AQMD Governing Board prior to its certification; and

**WHEREAS**, California Health and Safety Code §40727 requires that prior to adopting, amending or repealing a rule or regulation, the AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report; and

**WHEREAS**, the AQMD Governing Board has determined that a need exists to adopt the Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters to allow more time to develop water heaters that can meet the rule limits; and

**WHEREAS**, the AQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from §§ 39002, 40000, 40001, 40440, 40441, 40702, 40725 through 40728, 41508, and 41700 of the California Health and Safety Code; and

**WHEREAS**, the AQMD Governing Board has determined that Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters, as proposed to be amended is written or displayed so that its meaning can be easily understood by the persons directly affected by it; and

**WHEREAS**, the AQMD Governing Board has determined that Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters, as proposed to be amended is in harmony with, and not in conflict with or contradictory to, existing federal or state statutes, court decisions, or regulations; and

**WHEREAS**, the AQMD Governing Board has determined that Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters, as proposed to be amended does not impose the same requirements as any existing state or federal regulation and the proposed rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the District; and

**WHEREAS**, the AQMD Governing Board has determined that Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters, as proposed to be amended, references the following statutes which the AQMD hereby implements, interprets or makes specific: Health and Safety Code 40001(a) (rules to meet air quality standards); 40440(a) (rules to carry out the plan); 40702 (adoption of rules and regulations); and

**WHEREAS**, Health and Safety Code §40727.2 requires the AQMD to prepare a written analysis of existing federal air pollution control requirements applicable to the same source type being regulated whenever it adopts, or amends a rule, such that the AQMD's analysis of Proposed Amended Rule 1121 is included in the staff report; and

**WHEREAS**, the AQMD Governing Board has determined that the socioeconomic impact assessment of the Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters is consistent with the Governing Board March 17, 1989 and October 14, 1994 Board Socioeconomic Resolutions for rule adoption; and

**WHEREAS**, the AQMD Governing Board has determined that the socioeconomic impact assessment of the Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters is consistent with the provisions of Health and Safety Code §§ 40440.5, 40440.8 and 40728.5; and

**WHEREAS**, staff has determined that Proposed Amended Rule 1121 will not have a negative cost impact because the proposed rule allows for compliance with the current interim limit by January 1, 2005 or an extension of the deadline provided that a mitigation fee is paid in lieu of compliance with the interim limit; and

**WHEREAS**, the AQMD Governing Board has reviewed and considered the staff's findings related to cost impacts of Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters set forth in the socioeconomic impact assessment made public with the agenda package for this meeting, and hereby finds and determines that cost impacts are as set forth in that assessment; and

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

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

**WHEREAS**, the AQMD Governing Board has held a public hearing in accordance with all provisions of law;

**WHEREAS**, the AQMD Governing Board specifies the Manager of Proposed Amended Rule 1121 - Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of this proposed project is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

**NOW, THEREFORE, BE IT RESOLVED**, that the AQMD Governing Board hereby certifies, pursuant to the authority granted by law, the Final SEA for Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters; and

**BE IT FURTHER RESOLVED**, that the AQMD Governing Board does hereby adopt a Statement of Findings and Statement of Overriding Considerations pursuant to state CEQA Guidelines §§15091 and 15093,

respectively, which are included in Attachment 1, attached and incorporated herein by reference; and

**BE IT FURTHER RESOLVED**, that the AQMD Governing Board does hereby make a finding of infeasibility with regard to the January 1, 2005 compliance date for the final emission limit for Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters; and

**BE IT FURTHER RESOLVED**, that the AQMD Governing Board does hereby amend, pursuant to the authority granted by law, Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters, as set forth in the attached and incorporated herein by reference.

AYES: Antonovich, Burke, Craycraft, LaPisto-Kirtley, Loveridge, Perry, Silva, Verdugo-Peralta, Wilson, and Yates.

NOES: None.

ABSENT: Carney and Postmus.

Dated: 9-3-04

  
Saundra McDaniel, Clerk of the Board

(Adopted December 1, 1978)(Amended March 10, 1995)(Amended December 10, 1999)  
(Amended September 3, 2004)

**RULE 1121 CONTROL OF NITROGEN OXIDES FROM RESIDENTIAL  
TYPE, NATURAL GAS-FIRED WATER HEATERS**

(a) Applicability

This rule applies to manufacturers, distributors, retailers, and installers of natural gas-fired water heaters, with heat input rates less than 75,000 Btu per hour.

(b) Definitions

For the purpose of this rule:

- (1) BTU means British thermal unit or units.
- (2) DIRECT-VENT WATER HEATER means a water heater with air intake and exhaust ducts that use a gravity system to collect air from outside a building for combustion and exhaust combustion byproducts to the outside of a building.
- (~~3~~2) HEAT INPUT means the heat of combustion released by fuels burned in a unit based on the higher heating value of fuel. This does not include the enthalpy of incoming combustion air.
- (~~4~~3) HEAT OUTPUT means the product  $H_o$  as defined in Section 9.3 of the Protocol.
- (~~5~~4) INDEPENDENT TESTING LABORATORY means a testing laboratory that meets the requirements of District Rule 304, subdivision (k) and is approved by the District to conduct certification testing under the Protocol.
- (~~6~~5) MITIGATION FEE is an emission reduction option, in which monies collected by the District from water heater manufacturers are placed in a restricted fund and are used to fund stationary and mobile source emission reduction programs targeted at equivalent  $NO_x$  emission reductions as to those that would have otherwise occurred and have been approved by the District's Governing Board.
- (~~7~~6) MOBILE HOME WATER HEATER means a closed vessel manufactured exclusively for mobile home use in which water is heated by combustion of gaseous fuel and is withdrawn for use external to the vessel at pressures not exceeding 160 psig, including the apparatus by which heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210°F (99°C).
- (~~8~~7)  $NO_x$  EMISSIONS means the sum of nitric oxide and nitrogen dioxide in the flue gas, collectively expressed as nitrogen dioxide.

- (9) POWER-VENT WATER HEATER means a water heater with a blower installed to assist in the expulsion of exhaust gases.
- (10) POWER DIRECT-VENT WATER HEATER means a water heater with an air intake duct outside of a building with a blower installed to assist in the expulsion of exhaust gases.
- (118) PROTOCOL means South Coast Air Quality Management District Protocol: *Nitrogen Oxides Emissions Compliance Testing for Natural Gas-Fired Water Heaters and Small Boilers*, January 1998.
- (129) RATED HEAT INPUT CAPACITY means the heat input capacity specified on the nameplate of the combustion unit. If the combustion unit has been altered or modified such that its maximum heat input is different from the heat input capacity specified on the nameplate, the new maximum heat input shall be considered as the rated heat input capacity.
- (130) RECREATIONAL VEHICLE means either a motor home, travel trailer, truck camper, or camping trailer, with or without motive power, designed for human habitation for recreational, emergency, or other occupancy, as defined pursuant to Section 18010 of the California Health and Safety Code.
- (144) WATER HEATER means a closed vessel other than a mobile home water heater in which water is heated by combustion of gaseous fuel and is withdrawn for use external to the vessel at pressures not exceeding 160 psig, including the apparatus by which heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210°F (99°C).

(c) Requirements

- (1) Until July 1, 2002, no person shall manufacture for sale, distribute, sell, offer for sale, or install within the South Coast Air Quality Management District any gas-fired water heaters unless the water heater is certified pursuant to subdivision (d) to a NO<sub>x</sub> emission level of less than or equal to:
- (A) 40 nanograms of NO<sub>x</sub> (calculated as NO<sub>2</sub>) per joule of heat output (93 lb per billion Btu of heat output); or
- (B) 55 ppmv at 3% O<sub>2</sub>, dry (71 lb per billion Btu of heat input).
- (2) On or after July 1, 2002, no person shall manufacture for sale, distribute, sell, offer for sale, or install within the South Coast Air Quality Management District any gas-fired water heaters unless the water heater is certified pursuant to subdivision (d) to a NO<sub>x</sub> emission level of less than or equal to:

- (A) 20 nanograms of NO<sub>x</sub> (calculated as NO<sub>2</sub>) per joule of heat output (46.5 lb per billion Btu of heat output); or
  - (B) 30 ppmv at 3% O<sub>2</sub>, dry (35 lb per billion Btu of heat input); or
  - (C) the emission limit specified in subparagraph (c)(1)(A) or (c)(1)(B) provided the manufacturer of the water heater meets the requirements of subdivision ~~(f)~~(e).
- (3) On or after January 1, 2005~~6~~, for water heaters less than or equal to 50 gallon capacity, excluding direct-vent, power-vent and power direct-vent water heaters; on or after January 1, 2007 for water heaters greater than 50 gallon capacity, excluding direct-vent, power-vent and power direct-vent water heaters; and on and after January 1, 2008 for all direct-vent, power-vent, and power direct-vent water heaters; no person shall manufacture for sale, distribute, sell, offer for sale, or install within the South Coast Air Quality Management District any gas-fired water heaters unless the water heater is certified pursuant to subdivision (d) to a NO<sub>x</sub> emission level of less than or equal to:
- (A) 10 nanograms of NO<sub>x</sub> (calculated as NO<sub>2</sub>) per joule of heat output (23 lb per billion Btu of heat output); or
  - (B) 15 ppmv at 3% O<sub>2</sub>, dry (17.5 lb per billion Btu of heat input).
- (4) On and after January 1, 2000, no person shall manufacture for sale, distribute, sell, offer for sale, or install within the South Coast Air Quality Management District any gas-fired mobile home water heaters unless the water heater is certified pursuant to subdivision (d) to a NO<sub>x</sub> emission level of less than or equal to:
- (A) 40 nanograms of NO<sub>x</sub> (calculated as NO<sub>2</sub>) per joule of heat output (93 lb per billion Btu of heat output); or
  - (B) 55 ppmv at 3% O<sub>2</sub>, dry (71 lb per billion Btu of heat input).
- (5) The manufacturer of any water heater manufactured for sale in the district shall clearly display on the shipping carton and the name plate of the water heater:
- (A) the model number;
  - (B) the date of manufacture; and
  - (C) the certification status.
- ~~(6) Notwithstanding the requirements in paragraph (c)(2), until January 1, 2003, any person may distribute, sell, offer for sale, or install any gas fired water heater that is manufactured prior to July 1, 2002 and in compliance with the emission level specified in paragraph (c)(1).~~

- (6)(7) Notwithstanding the requirements in paragraph (c)(3), until July 1, 20056, any person may distribute, sell, offer for sale, or install ~~any~~ gas-fired water heaters less than or equal to 50 gallon capacity that are manufactured prior to January 1, 20056 and in compliance with ~~the emission level specified in~~ paragraph (c)(2).
- (7) Notwithstanding the requirements in paragraph (c)(3), until July 1, 2007, any person may distribute, sell, offer for sale, or install gas-fired water heaters greater than 50 gallon capacity that are manufactured prior to January 1, 2007 and in compliance with paragraphs (c)(2).
- (8) Notwithstanding the requirements in paragraph (c)(3), until July 1, 2008, any person may distribute, sell, offer for sale, or install gas-fired direct-vent, power-vent, or power direct-vent water heaters that are manufactured prior to January 1, 2008 and in compliance with paragraphs (c)(2).

(d) Certification

- (1) The manufacturer shall obtain confirmation that each model of water heater complies with the applicable requirements of subdivision (c) from an independent testing laboratory prior to applying for certification. This confirmation shall be based upon emission tests of a randomly selected unit of each model and the Protocol shall be adhered to during the confirmation testing of all water heaters subject to this rule.
- (2) When applying for certification of water heaters, the manufacturer shall submit to the Executive Officer the following:

  - (A) A statement that the model is in compliance with subdivision (c). The statement shall be signed by the manufacturer and dated, and shall attest to the accuracy of all statements;
  - (B) General Information

    - (i) Name and address of manufacturer,
    - (ii) Brand name, trade name and
    - (iii) Model number, as it appears on the water heater rating plate;
  - (C) A description of each model being certified; and
  - (D) A source test report verifying compliance with subdivision (c) for each model to be certified. The source test report shall be prepared by the confirming independent testing laboratory and shall contain all of the elements identified in Section 10 of the Protocol for each unit tested.

The source test shall have been conducted no more than ninety days prior to the date of submittal to the Executive Officer.

- (3) When applying for certification of water heaters, the manufacturer shall submit the items identified in paragraph (d)(2) no more than ninety days after the date of the source test identified in subparagraph (d)(2)(D).
- (4) When applying for certification of water heaters for compliance with the emission limit specified in paragraph (c)(2) or (c)(3), the manufacturer shall submit the information identified in paragraph (d)(2) at least 90 days prior to the effective compliance date specified in either paragraph (c)(2) or (c)(3), respectively.
- (5) The Executive Officer shall certify a water heater model which complies with the provisions of subdivision (c) and of paragraphs (d)(1), (d)(2), and (d)(3).
- (6) Certification status shall be valid for three years from the date of approval by the Executive Officer. After the third year, recertification shall be required according to the requirements of paragraphs (d)(1) and (d)(2).

~~(e) — Interim Progress Report~~

~~On or before July 1, 2003, any person that manufacturers water heaters for sale within the South Coast Air Basin shall submit to the Executive Officer an interim progress report that shall include:~~

- ~~(1) — A description of the technology to meet the NO<sub>x</sub> emission level specified under paragraph (c)(3);~~
- ~~(2) — The laboratory test results for a water heater developed to meet the NO<sub>x</sub> emission level specified under paragraph (c)(3) that shall include the emissions rate measured by an independent testing laboratory using the SCAQMD protocol specified under paragraph (b)(8);~~
- ~~(3) — Identification of any issues that need to be addressed prior to commercialization, efforts that have been made to reach commercialization, the approach that will be taken to resolve these issues, and the timeline; and~~
- ~~(4) — Estimated manufacturing date.~~

~~(e)(f)~~ Mitigation Fee

Any manufacturer that elects to submit a mitigation fee to the District to meet the NO<sub>x</sub> emission level established under subparagraph (c)(2)(C) shall:

- (1) submit a Mitigation Fee Plan to the Executive Officer 180 days prior to complying with the provisions of paragraph (c)(2), where the Mitigation Fee Plan includes:
  - (A) the name of the manufacturer;
  - ~~(B) the amount of NOx emission reductions needed as determined under paragraph (f)(3);~~
  - ~~(B)(C)~~ the compliance period that the mitigation fee covers shall not exceed a 12-month time period; and
  - ~~(C)(D)~~ the number of water heaters sold over the compliance period, which shall be based on sales records or invoices of water heaters in a similar model and size that were sold in the district over the past 12 months.
- (2) receive written verification from the Executive Officer that the Mitigation Fee Plan was approved prior to complying with the provisions of paragraph (c)(2);
- (3) on and after January 1, 2005, pay a mitigation fee at the beginning of the compliance period in the amount of \$3.00 per water heater sold as specified in subparagraph (e)(1)(C), over the time period the mitigation fee covers as specified in subparagraph (e)(1)(B); and before January 1, 2005, pay a mitigation fee in the amount of \$5,400 per ton of NOx multiplied by the amount of NOx emission reductions needed as specified in Equation 1;

Equation 1:

$$MF = \$5,400 / ton \times \left[ \frac{t \times n \times (190 \text{therms} / \text{yr}) \times (93 - 46.5 \text{lbs} / \text{billionBtu} - \text{output}) \times 0.76}{2000 \times 10,000} \right]$$

where:

MF = Mitigation fee, Dollars

$t$  = Time period that mitigation fee covers as specified in subparagraph (f)(1)(C)

$n$  = Number of water heaters sold as specified in subparagraph (f)(1)(D)

- (4) label water heaters identified in the Mitigation Fee Plan;
- (5) maintain records and report sales of water heaters covered by the Mitigation Fee Plan and if the number of water heaters originally estimated exceed the number of water heaters identified in subparagraph ~~(e)~~(1)(~~DC~~), the water heater manufacturer shall update the Mitigation Fee Plan within 60 days after the end of the compliance period. Make these records available to the Executive Officer upon request, for a period of at least three years after the end of the compliance period.

~~(f)~~(g) Enforcement

The Executive Officer may periodically inspect distributors, retailers, and installers of water heaters located in the District and conduct such tests as are deemed necessary to insure compliance with subdivision (c).

~~(g)~~(h) Exemptions

The provisions of this rule shall not apply to:

- (1) Water heaters with a rated heat input capacity of 75,000 Btu per hour or greater.
- (2) Water heaters used in recreational vehicles.

(h) Final Progress Report

On or before April 1, 2007, any person that manufacturers direct-vent, power-vent or power direct-vent water heaters for sale within the South Coast Air Basin shall submit to the Executive Officer a final progress report that shall include:

- (1) Identification of efforts that have been made to reach commercialization of direct-vent, power-vent, and power direct-vent water heaters that meet the NO<sub>x</sub> emission level specified under paragraph (c)(3);
- (2) A description of the technologies used to meet the NO<sub>x</sub> emission level for direct-vent, power-vent, and power direct-vent water heaters specified under paragraph (c)(3); and
- (3) Complete documentation for at least three laboratory test results each for direct-vent, power-vent, and power direct-vent water heaters developed to meet the NO<sub>x</sub> emission level specified under paragraph (c)(3) that shall include the emissions rate measured by an independent testing laboratory using the SCAQMD protocol specified under paragraph (b)(11) or other protocol approved in advance by the Executive Officer.

(i) Program Administration

On and after (*date of adoption*), the Executive Officer is authorized to use up to 5% of the mitigation fee funds collected in any given year for program administration.

(Adopted December 1, 1978)(Amended March 10, 1995)(Amended December 10, 1999)  
(Amended September 3, 2004)

**RULE 1121            CONTROL OF NITROGEN OXIDES FROM RESIDENTIAL  
TYPE, NATURAL GAS-FIRED WATER HEATERS**

(a)    Applicability

This rule applies to manufacturers, distributors, retailers, and installers of natural gas-fired water heaters, with heat input rates less than 75,000 Btu per hour.

(b)    Definitions

For the purpose of this rule:

- (1)    BTU means British thermal unit or units.
- (2)    DIRECT-VENT WATER HEATER means a water heater with air intake and exhaust ducts that use a gravity system to collect air from outside a building for combustion and exhaust combustion byproducts to the outside of a building.
- (3)    HEAT INPUT means the heat of combustion released by fuels burned in a unit based on the higher heating value of fuel. This does not include the enthalpy of incoming combustion air.
- (4)    HEAT OUTPUT means the product  $H_o$  as defined in Section 9.3 of the Protocol.
- (5)    INDEPENDENT TESTING LABORATORY means a testing laboratory that meets the requirements of District Rule 304, subdivision (k) and is approved by the District to conduct certification testing under the Protocol.
- (6)    MITIGATION FEE is an emission reduction option, in which monies collected by the District from water heater manufacturers are placed in a restricted fund and are used to fund stationary and mobile source emission reduction programs targeted at equivalent  $NO_x$  emission reductions as to those that would have otherwise occurred and have been approved by the District's Governing Board.
- (7)    MOBILE HOME WATER HEATER means a closed vessel manufactured exclusively for mobile home use in which water is heated by combustion of gaseous fuel and is withdrawn for use external to the vessel at pressures not exceeding 160 psig, including the apparatus by which heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210°F (99°C).
- (8)     $NO_x$  EMISSIONS means the sum of nitric oxide and nitrogen dioxide in the flue gas, collectively expressed as nitrogen dioxide.

- (9) POWER-VENT WATER HEATER means a water heater with a blower installed to assist in the expulsion of exhaust gases.
  - (10) POWER DIRECT-VENT WATER HEATER means a water heater with an air intake duct outside of a building with a blower installed to assist in the expulsion of exhaust gases.
  - (11) PROTOCOL means South Coast Air Quality Management District Protocol: *Nitrogen Oxides Emissions Compliance Testing for Natural Gas-Fired Water Heaters and Small Boilers*, January 1998.
  - (12) RATED HEAT INPUT CAPACITY means the heat input capacity specified on the nameplate of the combustion unit. If the combustion unit has been altered or modified such that its maximum heat input is different from the heat input capacity specified on the nameplate, the new maximum heat input shall be considered as the rated heat input capacity.
  - (13) RECREATIONAL VEHICLE means either a motor home, travel trailer, truck camper, or camping trailer, with or without motive power, designed for human habitation for recreational, emergency, or other occupancy, as defined pursuant to Section 18010 of the California Health and Safety Code.
  - (14) WATER HEATER means a closed vessel other than a mobile home water heater in which water is heated by combustion of gaseous fuel and is withdrawn for use external to the vessel at pressures not exceeding 160 psig, including the apparatus by which heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210°F (99°C).
- (c) Requirements
- (1) Until July 1, 2002, no person shall manufacture for sale, distribute, sell, offer for sale, or install within the South Coast Air Quality Management District any gas-fired water heaters unless the water heater is certified pursuant to subdivision (d) to a NO<sub>x</sub> emission level of less than or equal to:
    - (A) 40 nanograms of NO<sub>x</sub> (calculated as NO<sub>2</sub>) per joule of heat output (93 lb per billion Btu of heat output); or
    - (B) 55 ppmv at 3% O<sub>2</sub>, dry (71 lb per billion Btu of heat input).
  - (2) On or after July 1, 2002, no person shall manufacture for sale, distribute, sell, offer for sale, or install within the South Coast Air Quality Management District any gas-fired water heaters unless the water heater is certified pursuant to subdivision (d) to a NO<sub>x</sub> emission level of less than or equal to:

- (A) 20 nanograms of NO<sub>x</sub> (calculated as NO<sub>2</sub>) per joule of heat output (46.5 lb per billion Btu of heat output); or
  - (B) 30 ppmv at 3% O<sub>2</sub>, dry (35 lb per billion Btu of heat input); or
  - (C) the emission limit specified in subparagraph (c)(1)(A) or (c)(1)(B) provided the manufacturer of the water heater meets the requirements of subdivision (e).
- (3) On or after January 1, 2006, for water heaters less than or equal to 50 gallon capacity, excluding direct-vent, power-vent and power direct-vent water heaters; on or after January 1, 2007 for water heaters greater than 50 gallon capacity, excluding direct-vent, power-vent and power direct-vent water heaters; and on and after January 1, 2008 for all direct-vent, power-vent, and power direct-vent water heaters; no person shall manufacture for sale, distribute, sell, offer for sale, or install within the South Coast Air Quality Management District any gas-fired water heaters unless the water heater is certified pursuant to subdivision (d) to a NO<sub>x</sub> emission level of less than or equal to:
- (A) 10 nanograms of NO<sub>x</sub> (calculated as NO<sub>2</sub>) per joule of heat output (23 lb per billion Btu of heat output); or
  - (B) 15 ppmv at 3% O<sub>2</sub>, dry (17.5 lb per billion Btu of heat input).
- (4) On and after January 1, 2000, no person shall manufacture for sale, distribute, sell, offer for sale, or install within the South Coast Air Quality Management District any gas-fired mobile home water heaters unless the water heater is certified pursuant to subdivision (d) to a NO<sub>x</sub> emission level of less than or equal to:
- (A) 40 nanograms of NO<sub>x</sub> (calculated as NO<sub>2</sub>) per joule of heat output (93 lb per billion Btu of heat output); or
  - (B) 55 ppmv at 3% O<sub>2</sub>, dry (71 lb per billion Btu of heat input).
- (5) The manufacturer of any water heater manufactured for sale in the district shall clearly display on the shipping carton and the name plate of the water heater:
- (A) the model number;
  - (B) the date of manufacture; and
  - (C) the certification status.
- (6) Notwithstanding the requirements in paragraph (c)(3), until July 1, 2006, any person may distribute, sell, offer for sale, or install ~~any~~ gas-fired water heaters less than or equal to 50 gallon capacity that are manufactured prior to January 1, 2006 and in compliance with paragraph (c)(2).

- (7) Notwithstanding the requirements in paragraph (c)(3), until July 1, 2007, any person may distribute, sell, offer for sale, or install gas-fired water heaters greater than 50 gallon capacity that are manufactured prior to January 1, 2007 and in compliance with paragraphs (c)(2).
  - (8) Notwithstanding the requirements in paragraph (c)(3), until July 1, 2008, any person may distribute, sell, offer for sale, or install gas-fired direct-vent, power-vent, or power direct-vent water heaters that are manufactured prior to January 1, 2008 and in compliance with paragraphs (c)(2).
- (d) Certification
- (1) The manufacturer shall obtain confirmation that each model of water heater complies with the applicable requirements of subdivision (c) from an independent testing laboratory prior to applying for certification. This confirmation shall be based upon emission tests of a randomly selected unit of each model and the Protocol shall be adhered to during the confirmation testing of all water heaters subject to this rule.
  - (2) When applying for certification of water heaters, the manufacturer shall submit to the Executive Officer the following:
    - (A) A statement that the model is in compliance with subdivision (c). The statement shall be signed by the manufacturer and dated, and shall attest to the accuracy of all statements;
    - (B) General Information
      - (i) Name and address of manufacturer,
      - (ii) Brand name, trade name and
      - (iii) Model number, as it appears on the water heater rating plate;
    - (C) A description of each model being certified; and
    - (D) A source test report verifying compliance with subdivision (c) for each model to be certified. The source test report shall be prepared by the confirming independent testing laboratory and shall contain all of the elements identified in Section 10 of the Protocol for each unit tested. The source test shall have been conducted no more than ninety days prior to the date of submittal to the Executive Officer.
  - (3) When applying for certification of water heaters, the manufacturer shall submit the items identified in paragraph (d)(2) no more than ninety days after the date of the source test identified in subparagraph (d)(2)(D).

- (4) When applying for certification of water heaters for compliance with the emission limit specified in paragraph (c)(2) or (c)(3), the manufacturer shall submit the information identified in paragraph (d)(2) at least 90 days prior to the effective compliance date specified in either paragraph (c)(2) or (c)(3), respectively.
- (5) The Executive Officer shall certify a water heater model which complies with the provisions of subdivision (c) and of paragraphs (d)(1), (d)(2), and (d)(3).
- (6) Certification status shall be valid for three years from the date of approval by the Executive Officer. After the third year, recertification shall be required according to the requirements of paragraphs (d)(1) and (d)(2).

(e) Mitigation Fee

Any manufacturer that elects to submit a mitigation fee to the District to meet the NO<sub>x</sub> emission level established under subparagraph (c)(2)(C) shall:

- (1) submit a Mitigation Fee Plan to the Executive Officer 180 days prior to complying with the provisions of paragraph (c)(2), where the Mitigation Fee Plan includes:
  - (A) the name of the manufacturer;
  - (B) the compliance period that the mitigation fee covers shall not exceed a 12-month time period; and
  - (C) the number of water heaters sold over the compliance period, which shall be based on sales records or invoices of water heaters in a similar model and size that were sold in the district over the past 12 months.
- (2) receive written verification from the Executive Officer that the Mitigation Fee Plan was approved prior to complying with the provisions of paragraph (c)(2);
- (3) on and after January 1, 2005, pay a mitigation fee at the beginning of the compliance period in the amount of \$3.00 per water heater sold as specified in subparagraph (e)(1)(C), over the time period the mitigation fee covers as specified in subparagraph (e)(1)(B); and before January 1, 2005, pay a mitigation fee in the amount of \$5,400 per ton of NO<sub>x</sub> multiplied by the amount of NO<sub>x</sub> emission reductions needed as specified in Equation 1;

*Equation 1:*

$$MF = \$5,400 / ton \times \left[ \frac{t \times n \times (190 \text{therms} / \text{yr}) \times (93 - 46.5 \text{lbs} / \text{billionBtu} - \text{output}) \times 0.76}{2000 \times 10,000} \right]$$

where:

MF = Mitigation fee, Dollars

$t$  = Time period that mitigation fee covers as specified in subparagraph (f)(1)(C)

$n$  = Number of water heaters sold as specified in subparagraph (f)(1)(D)

- (4) label water heaters identified in the Mitigation Fee Plan;
  - (5) maintain records and report sales of water heaters covered by the Mitigation Fee Plan and if the number of water heaters originally estimated exceed the number of water heaters identified in subparagraph (e)(1)(C), the water heater manufacturer shall update the Mitigation Fee Plan within 60 days after the end of the compliance period. Make these records available to the Executive Officer upon request, for a period of at least three years after the end of the compliance period.
- (f) Enforcement
- The Executive Officer may periodically inspect distributors, retailers, and installers of water heaters located in the District and conduct such tests as are deemed necessary to insure compliance with subdivision (c).
- (g) Exemptions
- The provisions of this rule shall not apply to:
- (1) Water heaters with a rated heat input capacity of 75,000 Btu per hour or greater.
  - (2) Water heaters used in recreational vehicles.
- (h) Final Progress Report
- On or before April 1, 2007, any person that manufacturers direct-vent, power-vent or power direct-vent water heaters for sale within the South Coast Air Basin shall submit to the Executive Officer a final progress report that shall include:
- (1) Identification of efforts that have been made to reach commercialization of direct-vent, power-vent, and power direct-vent water heaters that meet the  $\text{NO}_x$  emission level specified under paragraph (c)(3);
  - (2) A description of the technologies used to meet the  $\text{NO}_x$  emission level for direct-vent, power-vent, and power direct-vent water heaters specified under paragraph (c)(3); and
  - (3) Complete documentation for at least three laboratory test results each for direct-vent, power-vent, and power direct-vent water heaters developed to

meet the NO<sub>x</sub> emission level specified under paragraph (c)(3) that shall include the emissions rate measured by an independent testing laboratory using the SCAQMD protocol specified under paragraph (b)(11) or other protocol approved in advance by the Executive Officer.

(i) Program Administration

On and after September 3, 2004, the Executive Officer is authorized to use up to 5% of the mitigation fee funds collected in any given year for program administration.

**INLAND VALLEY  
DAILY BULLETIN**  
(formerly the Progress Bulletin)

2041 E. 4th Street  
Ontario, CA 91764

AUG 24 2004  
RECEIVED

**PROOF OF PUBLICATION  
(2015.5)**

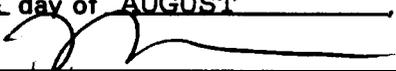
**STATE OF CALIFORNIA  
County of Los Angeles**

I am a citizen of the United States, I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the principal clerk of the printer of INLAND VALLEY DAILY BULLETIN, a newspaper of general circulation printed and published daily for the City of Pomona, County of Los Angeles, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Los Angeles, State of California, on the date of June 15, 1945, Decree No. Pomo C-606. The notice, of which the annexed is a true printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

8/4/04

I declare under penalty of perjury that the foregoing is true and correct.

Executed at Ontario, San Bernardino Co. California  
this 4 day of AUGUST, 20 04

  
signature

NOTICE IS FURTHER GIVEN that the AQMD has prepared documents, for consideration by the AQMD Board, including:

Proposed Amended Board letter (serving as the staff report) regarding the proposed amendments to Rule 2007

Notice of Exemption from the California Environmental Quality Act (will be prepared)

The above documents and materials are available for review at the AQMD Public Information Center, or may be obtained by contacting:

Ofelia Wartfield - Public Advisor's Office  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4182  
(909) 396-2039

NOTICE IS FURTHER GIVEN that at the conclusion of the public hearing, the AQMD Board may make other amendments to Rule 2007 which are justified by the evidence presented, or may decline the amendments.

Information on Proposed Amended Rule 2007 can be obtained by contacting Jill Whynot, Planning and Rules Manager, Planning, Rule Development and Area Sources, South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, CA 91765-4178, (909) 396-3104, or jwhynot@aqmd.gov.

Interested persons may attend and submit oral or written statements at the Board Hearing. Twenty-five (25) copies of all written materials must be submitted to the Clerk of the Board. Individuals who wish to submit written comments for review prior to the hearing must submit such comments to the Clerk of the Board, 21865 Copley Drive, Diamond Bar, CA, 91765-4178, (909) 396-2500, or to cab@aqmd.gov on or before Tuesday, August 24, 2004. Electronic submittals will only be accepted if there are no more than 10 pages, including attachments, and submittals are in MS Word, plain or HTML format.

In a separate, related item, there will be an Informational Hearing on September 3, 2004 to discuss key issues relative to other proposed RECLAIM rule amendments, currently scheduled for a November 2004 Public Hearing.  
DATED: July 28, 2004  
S A U N D R A  
McDANIEL  
Clerk of the Board  
08/04/04  
CNS-707396#  
INLAND VALLEY  
DAILY BULLETIN/LA  
#57565

CNS-707396#  
NOTICE OF PUBLIC HEARING PROPOSED AMENDMENTS TO THE RULES AND REGULATIONS OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Re: Proposed Amended Rule 2007 - Trading Requirements  
NOTICE IS HEREBY GIVEN that a public hearing on the matter of adoption of rules and regulations for the South Coast Air Quality Management District (AQMD), or the amendments thereto, will be held on Friday, September 3, 2004 in the Diamond Bar Auditorium, AQMD Headquarters, 21865 Copley Drive, Diamond Bar, CA, at 9:00 a.m., at which time evidence will be taken and all interested persons will be heard by the AQMD Board.

NOTICE IS FURTHER GIVEN that the AQMD is considering the amendment of Rule 2007 to address CARB concerns regarding the reintroduction of power plants to the RECLAIM trading market. The proposal contains a provision to continue the existing trading provisions, contingent upon other RECLAIM rule amendments (currently scheduled for November 2004) that will decrease allocations to implement the 2003 AQMP Control Measure CMB-10 and to reflect Best Available Retrofit Technology (BARCT). The air quality objective is to ensure BARCT adjustments are made to facility allocations prior to removal of power plant trading restrictions.

Publ  
Past  
SECC  
AC  
AD

# THE PRESS-ENTERPRISE

Corona-Norco Independent, Elsinore Sun-Tribune,  
Rancho News, Sun City News, Menifee Valley News

3512 Fourteenth Street  
Riverside CA 92501-3878  
951-684-1200  
951-368-9018 FAX

**PROOF OF PUBLICATION  
(2010, 2015.5 C.C.P.)**

PROOF OF PUBLICATION OF

LE-Open

Ad Desc.: Rule 2007 / 707405

I am a citizen of the United States. I am over the age of eighteen years and not a party to or interested in the above entitled matter. I am an authorized representative of THE PRESS-ENTERPRISE, a newspaper of general circulation, printed and published daily in the city of Riverside, County of Riverside, and which newspaper has been adjudicated a newspaper of general circulation by the Superior Court of the County of Riverside, State of California, under date of April 25, 1952, Case Number 54446, under date of March 29, 1957, Case Number 65673 and under date of August 25, 1995, Case Number 267864; that the notice, of which the annexed is a printed copy, has been published in said newspaper in accordance with the instructions of the person(s) requesting publication, and not in any supplement thereof on the following dates, to wit:

08-04-04

I Certify (or declare) under penalty of perjury that the foregoing is true and correct.

Date: Aug. 4, 2004  
At: Riverside, California



CALIF NEWSPAPER SERV BUREAU  
PO BOX 60460  
LOS ANGELES CA 90060

Ad #: 6068528

PO #: CNSB707405

Agency #: \_\_\_\_\_

Ad Copy:

**NOTICE OF PUBLIC  
HEARING  
PROPOSED  
AMENDMENTS TO  
THE RULES AND  
REGULATIONS OF THE  
SOUTH COAST AIR  
QUALITY MANAGEMENT  
DISTRICT**

**Re: Proposed Amended  
Rule 2007 - Trading  
Requirements**

**NOTICE IS HEREBY GIVEN** that a public hearing on the matter of adoption of rules and regulations for the South Coast Air Quality Management District (AQMD), or the amendments thereto, will be held on Friday, September 3, 2004 in the Diamond Bar Auditorium, AQMD Headquarters, 21865 Copley Drive, Diamond Bar, CA, at 9:00 a.m., at which time evidence will be taken and all interested persons will be heard by the AQMD Board.

**NOTICE IS FURTHER GIVEN** that the AQMD is considering the amendment of Rule 2007 to address CARB concerns regarding the re-introduction of power plants to the RECLAIM trading market. The proposal contains a provision to continue the existing trading provisions, contingent upon other RECLAIM rule amendments (currently scheduled for November 2004) that will decrease allocations to implement the 2003 AQMP Control Measure CMB-10 and to reflect Best Available Retrofit Control Technology (BARCT). The air quality objective is to ensure BARCT adjustments are made to facility allocations prior to removal of power plant trading restrictions.

**NOTICE IS FURTHER GIVEN** that the AQMD has prepared documents, for consideration by the AQMD Board, including:

Proposed Amended Rule 2007 Board letter (serving as the staff report) regarding the proposed amendments to Rule 2007

Notice of Exemption from the California Environmental Quality Act (will be prepared)

The above documents and materials are available for review at the AQMD Public Information Center, or may be obtained by contacting:

Ofelia Warfield - Public Advisor's Office  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4182  
(909) 396-2039

**NOTICE IS FURTHER GIVEN** that at the conclusion of the public hearing, the AQMD Board may make other amendments to Rule 2007 which are justified by the evidence presented, or may decline the amendments.

Information on Proposed Amended Rule 2007 can be obtained by contacting Jill Whynot, Planning and Rules Manager, Planning, Rule Development and Area Sources, South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, CA 91765-4178, (909) 396-3104, or [jwhynot@aqmd.gov](mailto:jwhynot@aqmd.gov).

Interested persons may attend and submit oral or written statements at the Board Hearing. Twenty-five (25) copies of all written materials must be submitted to the Clerk of the Board. Individuals who wish to submit written comments for review prior to the hearing must submit such comments to the Clerk of the Board, 21865 Copley Drive, Diamond

Bar, CA, 91765-4178, (909) 396-2500, or to [cob@aqmd.gov](mailto:cob@aqmd.gov) on or before Tuesday, August 24, 2004. Electronic submissions will only be accepted if there are no more than 10 pages, including attachments, and submissions are in MS Word, plain or HTML format.

In a separate, related item, there will be an Informational Hearing on September 3, 2004 to discuss key issues relative to other proposed RECLAIM rule amendments, currently scheduled for a November 2004 Public Hearing.

DATED: July 28, 2004  
SAUNDRA McDANIEL  
Clerk of the Board

08/04/04  
CNS-707405#  
RIVERSIDE PRESS  
ENTERPRISE

AUG 19 2004  
RECEIVED

THE REGISTER

625 N GRAND AVE, SANTA ANA, CA 92701  
Telephone (714)796-7000 / Fax (714)796-6059



PROOF OF PUBLICATION

(2015.5 C.C.P.)

State of California )  
County of ORANGE ) ss

Notice Type: HRG - NOTICE OF HEARING

Ad Description: PUBLIC HEARING RULE 2007

I am a citizen of the United States; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the printer and publisher of the THE REGISTER, a newspaper published in the English language in the City of SANTA ANA, County of ORANGE, and adjudged a newspaper of general circulation as defined by the laws of the State of California by the Superior Court of the County of ORANGE, State of California, under date 11/19/1905, Case No. A21046. That the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

08/04/04

Executed on: 08/04/04  
At SANTA ANA, CA

certify (or declare) under penalty of perjury that the foregoing is true and correct.

*Jeanne Castiblanco*  
Signature

CNS#: 707158

NOTICE OF PUBLIC HEARING PROPOSED AMENDMENTS TO THE RULES AND REGULATIONS OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Re: Proposed Amended Rule 2007 - Trading Requirements

NOTICE IS HEREBY GIVEN that a public hearing on the matter of adoption of rules and regulations for the South Coast Air Quality Management District (AQMD), or the amendments thereto, will be held on Friday, September 3, 2004 in the Diamond Bar Auditorium, AQMD Headquarters, 21865 Copley Drive, Diamond Bar, CA, at 9:00 a.m., at which time evidence will be taken and all interested persons will be heard by the AQMD Board.

NOTICE IS FURTHER GIVEN that the AQMD is considering the amendment of Rule 2007 to address CARB concerns regarding the reintroduction of power plants to the RECLAIM trading market. The proposal contains a provision to continue the existing trading provisions, contingent upon other RECLAIM rule amendments (currently scheduled for November 2004) that will decrease allocations to implement the 2003 AQMP Control Measure CMB-10 and to reflect Best Available Retrofit Control Technology (BARCT). The air quality objective is to ensure BARCT adjustments are made to facility allocations prior to removal of power plant trading restrictions.

NOTICE IS FURTHER GIVEN that the AQMD has prepared documents, for consideration by the AQMD Board, including:

Proposed Amended Rule 2007 Board letter (serving as the staff report) regarding the proposed amendments to Rule 2007 Notice of Exemption from the California Environmental Quality Act (will be prepared)

The above documents and materials are available for review at the AQMD Public Information Center, or may be obtained by contacting:

Ottala Workfield - Public Advisor's Office South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765-4182 (909) 396-2039

NOTICE IS FURTHER GIVEN that at the conclusion of the public hearing, the AQMD Board may make other amendments to Rule 2007 which are justified by the evidence presented, or may decline the amendments.

Information on Proposed Amended Rule 2007 can be obtained by contacting Jill Whynot, Planning and Rules Manager, Planning, Rule Development and Area Sources, South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, CA 91765-4178, (909) 396-3104, or jwhynot@aqmd.gov.

Interested persons may attend and submit oral or written statements at the Board Hearing. Twenty-five (25) copies of all written materials must be submitted to the Clerk of the Board. Individuals who wish to submit written comments for review prior to the hearing must submit such comments to the Clerk of the Board, 21865 Copley Drive, Diamond Bar, CA, 91765-4178, (909) 396-2500, or to cob@aqmd.gov on or before Tuesday, August 24, 2004. Electronic submittals will only be accepted if there are no more than 10 pages, including attachments, and submittals are in MS Word, plain or HTML format.

In a separate, related item, there will be an Informational Hearing on September 3, 2004 to discuss key issues relative to other proposed RECLAIM rule amendments, currently scheduled for a November 2004 Public Hearing.

DATED: July 28, 2004 SAUNDRA McDANIEL Clerk of the Board

08/04/04 CNS-707158 THE REGISTER

(When required)

RECORDING REQUESTED BY AND MAIL TO:

The Los Angeles DAILY JOURNAL  
~ SINCE 1888 ~

915 E. First Street, Los Angeles, California 90012  
Mailing Address: P.O. Box 54026, Los Angeles, California 90054-0026  
Telephone (213) 229-5300 • Fax (213) 680-3682

SAUNDRA McDANIEL  
SCAQMD/HEARING BOARD  
21865 COPLEY DRIVE  
DIAMOND BAR, CA 91765-4178

**PROOF OF PUBLICATION**

(2015.5 C.C.P.)

State of California  
County of Los Angeles

Notice Type: HRG NOTICE OF HEARING

Ad Description: PUBLIC HEARING RULE 2007

I am a citizen of the United States and a resident of the County of Los Angeles; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the printer and publisher of the Los Angeles Daily Journal, a daily newspaper published in the English language in the City of Los Angeles, and adjudged a newspaper of general circulation as defined by the laws of the State of California by the Superior Court of the County of Los Angeles, State of California, under date of June 2, 1952, Case No. 599,382. That the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

08/04/04

Executed on: 08/04/2004  
At Los Angeles, California

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

  
Signature

This space for filing stamp only

AUG 24 2004  
RECEIVED

DJ#: 707407

**NOTICE OF PUBLIC HEARING  
PROPOSED AMENDMENTS TO  
THE RULES AND REGULATIONS OF  
THE  
SOUTH COAST AIR QUALITY  
MANAGEMENT DISTRICT**

**Re: Proposed Amended Rule 2007 -  
Trading Requirements**

NOTICE IS HEREBY GIVEN that a public hearing on the matter of adoption of rules and regulations for the South Coast Air Quality Management District (AQMD), or the amendments thereto, will be held on Friday, September 3, 2004 in the Diamond Bar Auditorium, AQMD Headquarters, 21865 Copley Drive, Diamond Bar, CA, at 9:00 a.m., at which time evidence will be taken and all interested persons will be heard by the AQMD Board.

NOTICE IS FURTHER GIVEN that the AQMD is considering the amendment of Rule 2007 to address CARB concerns regarding the reintroduction of power plants to the RECLAIM trading market. The proposal contains a provision to continue the existing trading provisions, contingent upon other RECLAIM rule amendments (currently scheduled for November 2004) that will decrease allocations to implement the 2003 AQMP Control Measure CMB-10 and to reflect Best Available Retrofit Control Technology (BARCT). The air quality objective is to ensure BARCT adjustments are made to facility allocations prior to removal of power plant trading restrictions.

NOTICE IS FURTHER GIVEN that the AQMD has prepared documents, for consideration by the AQMD Board, including:

Proposed Amended Rule 2007  
Board letter (serving as the staff report) regarding the proposed amendments to Rule 2007  
Notice of Exemption from the California Environmental Quality Act (will be prepared)

The above documents and materials are available for review at the AQMD Public Information Center, or may be obtained by contacting:

Otelia Warfield - Public Advisor's Office  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4182  
(909) 396-2039

NOTICE IS FURTHER GIVEN that at the conclusion of the public hearing, the AQMD Board may make other amendments to Rule 2007 which are justified by the evidence presented, or may decline the amendments.

Information on Proposed Amended Rule 2007 can be obtained by contacting Jill Whyntot, Planning and Rules Manager, Planning, Rule Development and Area Sources, South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, CA 91765-4178, (909) 396-3104, or jwhyntot@aqmd.gov.

Interested persons may attend and submit oral or written statements at the Board Hearing. Twenty-five (25) copies of all written materials must be submitted to the Clerk of the Board. Individuals who wish to submit written comments for review prior to the hearing must submit such comments to the Clerk of the Board, 21865 Copley Drive, Diamond Bar, CA, 91765-4178, (909) 396-2500, or to

cob@aqmd.gov on or before Tuesday, August 24, 2004. Electronic submittals will only be accepted if there are no more than 10 pages, including attachments, and submittals are in MS Word, plain or HTML format.

In a separate, related item, there will be an Informational Hearing on September 3, 2004 to discuss key issues relative to other proposed RECLAIM rule amendments, currently scheduled for a November 2004 Public Hearing.

DATED: July 28, 2004

SAUNDRA McDANIEL  
Clerk of the Board

08/04/04

DJ- 707407#

THE SUN

399 North " D"Street  
San Bernardino, CA 92401  
(909) 397-3986

SAUNDRA McDANIEL  
SCAQMD/HEARING BOARD  
21865 COPLEY DRIVE  
DIAMOND BAR, CA 91765-4178

PROOF OF PUBLICATION

(2015.5 C.C.P

State of California  
County of San Bernardino )

Notice Type: HRG NOTICE OF HEARING

Ad Description PUBLIC HEARING RULE 2007

I am a citizen of the United States, over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the representative of the printer and publisher of The Sun, a daily newspaper printed and published in the English language in the City of San Bernardino, County of San Bernardino, and adjudged a newspaper of general circulation as defined by the laws of the State of California by the Superior Court of the County of San Bernardino, State of California, under date June 20, 1952, Case No. 73084. That the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

08/04/04

Executed on: 08/04/2004  
At Los Angeles, California

I certify (or declare) under penalty of perjury that the foregoing is true and correct

Signature

This space for filing stamp only

AUG 24 2004  
RECEIVED

SBS#: 707403

NOTICE OF PUBLIC HEARING PROPOSED AMENDMENTS TO THE RULES AND REGULATIONS OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Re: Proposed Amended Rule 2007 - Trading Requirements

NOTICE IS HEREBY GIVEN that a public hearing on the matter of adoption of rules and regulations for the South Coast Air Quality Management District (AQMD), or the amendments thereto, will be held on Friday, September 3, 2004 in the Diamond Bar Auditorium, AQMD Headquarters, 21865 Copley Drive, Diamond Bar, CA, at 9:00 a.m., at which time evidence will be taken and all interested persons will be heard by the AQMD Board.

NOTICE IS FURTHER GIVEN that the AQMD is considering the amendment of Rule 2007 to address CARB concerns regarding the reintroduction of power plants to the RECLAIM trading market. The proposal contains a provision to continue the existing trading provisions, contingent upon other RECLAIM rule amendments (currently scheduled for November 2004) that will decrease allocations to implement the 2003 AQMP Control Measure CME-10 and to reflect Best Available Retrofit Control Technology (BARCT). The air quality objective is to ensure BARCT adjustments are made to facility allocations prior to removal of power plant trading restrictions.

NOTICE IS FURTHER GIVEN that the AQMD has prepared documents, for consideration by the AQMD Board, including:

Proposed Amended Rule 2007 Board letter (serving as the staff report) regarding the proposed amendments to Rule 2007

Notice of Exemption from the California Environmental Quality Act (will be prepared)

The above documents and materials are available for review at the AQMD Public Information Center, or may be obtained by contacting:

Olesia Warfield - Public Advisor's Office  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4182  
(909) 396-2030

NOTICE IS FURTHER GIVEN that at the conclusion of the public hearing, the AQMD

Board may make other amendments to Rule 2007 which are justified by the evidence presented, or may decline the amendments.

Information on Proposed Amended Rule 2007 can be obtained by contacting Jill Whymol, Planning and Rules Manager, Planning, Rule Development and Area Sources, South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, CA 91765-4178, (909) 396-3104, or jwhymol@sqmd.gov.

Interested persons may attend and submit oral or written statements at the Board Hearing. Twenty-five (25) copies of all written materials must be submitted to the Clerk of the Board. Individuals who wish to submit written comments for review prior to the hearing must submit such comments to the Clerk of the Board, 21865 Copley Drive, Diamond Bar, CA, 91765-4178, (909) 396-2500, or cob@sqmd.gov on or before Tuesday, August 24, 2004. Electronic submittals will only be accepted if there are no more than 10 pages, including attachments, and submittals are in MS Word, plain or HTML format.

In a separate, related item, there will be an Informational Hearing on September 3, 2004 to discuss key issues relative to other proposed RECLAIM rule amendments, currently scheduled for a November 2004 Public Hearing.

DATED: July 28, 2004  
SAUNDRA McDANIEL  
Clerk of the Board

08/04/04 SBS- 7074030

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

---

**Final Staff Report**  
**Proposed Amended Rule 1121 - Control of Nitrogen Oxides From**  
**Residential**  
**Type, Natural Gas-Fired Water Heaters**

**August 2004**

**Deputy Executive Officer**  
Planning, Rule Development, and Area Sources  
Elaine Chang, DrPH

**Assistant Deputy Executive Officer**  
Planning, Rule Development, and Area Sources  
Laki Tisopolos, Ph.D., P.E.

**Planning and Rules Manager**  
Planning, Rule Development, and Area Sources  
Jill Whynot

---

Author: Wayne Barcikowski - Air Quality Specialist  
Sue Lieu - Program Supervisor

Reviewed by:

William Wong - Senior Deputy District Counsel  
Andrew Lee, P.E. – Program Supervisor

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
GOVERNING BOARD**

Chairman: WILLIAM A. BURKE, Ed.D.  
Speaker of the Assembly Appointee

Vice Chairman: S. ROY WILSON, Ed.D.  
Supervisor, Fourth District  
Riverside County Representative

**MEMBERS:**

MICHAEL D. ANTONOVICH  
Supervisor, Fifth District  
Los Angeles County Representative

JANE W. CARNEY  
Senate Rules Committee Appointee

WILLIAM S. CRAYCRAFT  
Council Member, City of Mission Viejo  
Cities Representative, County of Orange

BEATRICE J. S. LAPISTO-KIRTLEY  
Mayor, City of Bradbury  
Cities Representative, Los Angeles County/Eastern Region

RONALD O. LOVERIDGE  
Mayor, City of Riverside  
Cities Representative, Riverside County

JAN PERRY  
Council Member, City of Los Angeles  
Cities Representative, Los Angeles County/Western Region

BILL POSTMUS  
Supervisor, First District  
San Bernardino County Representative

JAMES W. SILVA  
Supervisor, Second District  
Orange County Representative

CYNTHIA VERDUGO-PERALTA  
Governor's Appointee

DENNIS YATES  
Council Member, City of Chino  
Cities Representative, San Bernardino County

EXECUTIVE OFFICER:

BARRY R. WALLERSTEIN, D.Env.

# TABLE OF CONTENTS

<b>TABLE OF CONTENTS</b>	i
<b>EXECUTIVE SUMMARY</b>	
BACKGROUND	ES-1
PROPOSED RULE AMENDMENTS	ES-1
IMPACT ASSESSMENT	ES-2
<b>CHAPTER 1: BACKGROUND</b>	
INTRODUCTION	1-1
REGULATORY HISTORY	1-1
AFFECTED INDUSTRIES	1-2
REDUCING NO <sub>x</sub> EMISSIONS	1-3
TYPES OF WATER HEATERS	1-4
<b>CHAPTER 2: SUMMARY OF PROPOSED AMENDED RULE 1121</b>	
OVERVIEW	2-1
PROPOSED AMENDED RULE 1121 REQUIREMENTS	2-2
<b>CHAPTER 3: IMPACT ASSESSMENT</b>	
IMPACT ANALYSIS	3-1
CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ANALYSIS	3-2 <del>3</del>
SOCIOECONOMIC ASSESSMENT	3-3
<del>    DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY</del>	
<del>    —CODE SECTION 40727—</del>	<del>3-3</del>
INCREMENTAL COST EFFECTIVENESS	3- <del>34</del>
COMPARATIVE ANALYSIS	3-4
<b>CHAPTER 4: CONCLUSIONS</b>	
SUMMARY	4-1
<b>REFERENCES</b>	R-1
<b>LIST OF TABLES AND FIGURES</b>	
Figure 1 - Emission Reductions of Proposed Amended Rule Compared With Current Rule	ES-2 & 3- <del>42</del>
Figure 2 - Current Water Heater Regulatory Requirements	1-3
Table C-1 - Annual Mitigation Fee Payment	C-2
<b>APPENDIX A: PAR 1121 EMISSION INVENTORY</b>	

**APPENDIX B: PUBLIC COMMENTS**

**APPENDIX C: SOCIOECONOMIC ASSESSMENT**

## **EXECUTIVE SUMMARY**

---

**BACKGROUND**

**PROPOSED RULE AMENDMENTS**

**IMPACT ASSESSMENT**

## BACKGROUND

Rule 1121 – Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters, was originally adopted in December 1978 and established a nitrogen oxide (NO<sub>x</sub>) emission limit of 40 nanograms/joule (ng/J) for residential water heaters. The rule was amended in December 1999 to lower the nitrogen oxide emission limit. The amendment reduced the NO<sub>x</sub> limit in two steps from 40 ng/J to 20 ng/J on July 1, 2002 (interim limit) and 10 ng/J on January 1, 2005 (final limit). All four subject manufacturers elected to pay an emission mitigation fee, an option provided in the rule, in lieu of meeting the July 1, 2002 interim limit.

The rule required manufacturers to provide a report by July 1, 2003 on their progress toward meeting the final emission limit in the rule. Staff has received and reviewed these reports and had meetings with representatives of water heater manufacturers and the Gas Appliance Manufacturers Association (GAMA). Staff submitted a report to the Governing Board in January 2004 and the Board directed staff to proceed with evaluation for rule development.

GAMA and the manufacturers have requested a delay in the compliance date for the final rule limit for most units and an exemption for power and direct vented water heaters. GAMA and the manufacturers have proposed that the 10 ng/J limit for atmospheric residential type water heaters of 50 gallons or less capacity be delayed one year until January 2006. In addition, they have also proposed a two year delay for residential water heaters greater than 50 gallon capacity, and a full exemption from both final and interim standards for direct vented and power vented water heaters.

The reasons for requesting the delay are both technical and business related. The manufacturers have focused much of their efforts on meeting a new flammable vapor ignition resistance (FVIR) standard, new U.S. Department of Energy (DOE) efficiency requirements and changing over to a new foam blowing agent for producing water heater insulation foam which is not an ozone depleting compound. They require additional time to integrate the new burner systems into the new design water heaters.

GAMA and the manufacturers have also proposed extending the mitigation fee program. They have also proposed simplifying the fee by changing to one based on the number of units sold in the District, and increasing the fee above the current level.

## PROPOSED RULE AMENDMENTS

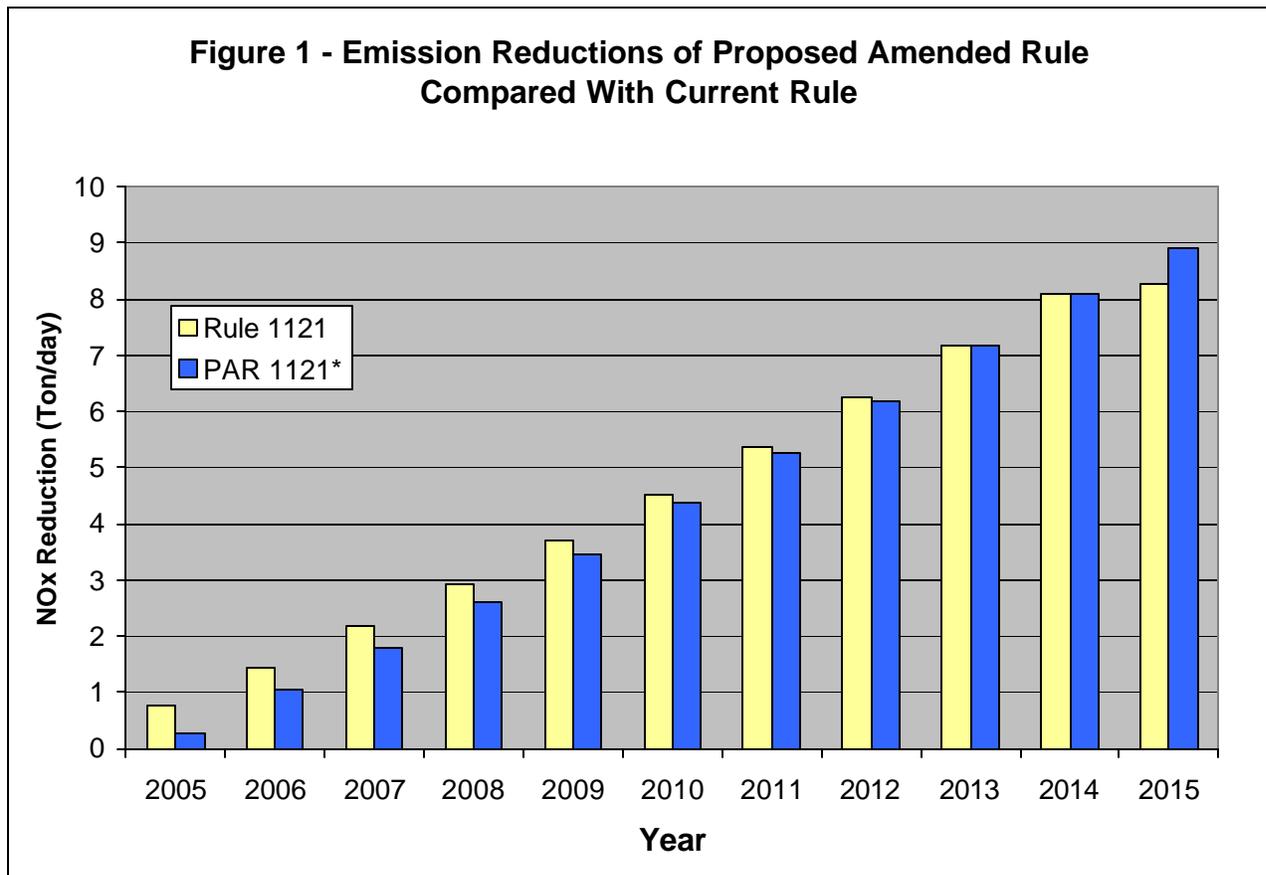
Staff is proposing to extend the compliance date for the final rule limit and continue the mitigation fee as a compliance option for the interim rule limit of 20 ng/J. Manufacturers would have to meet the final emission limit in the rule by January 1, 2006, for conventional water heaters of 50 gallon capacity or less and by January 1, 2007, for conventional water heaters greater than 50 gallon capacity. Staff is proposing a three year delay, until January 1, 2008, for direct-vent, power-vent, and power direct-vent water heaters. Manufacturers proposed a revised fee of \$2.50 per water heater for the mitigation fee in the rule. Staff proposes to set the fee at \$3.00 per unit (current fee is equivalent to \$1.82 per unit) to reflect current control costs. Staff also proposes to allow the Executive Officer to recover

administrative costs of up to 5% for administering emission reduction projects and for the mitigation fee program.

The proposed rule language also includes minor changes to address the transition from the existing mitigation fee program to the new proposed fee program on date of adoption. The proposed rule also allows new units meeting the existing standard and manufactured before the compliance date for the new standard to be sold to customers for up to six months after the compliance date. Staff is not proposing any exemptions from the final rule limit.

## IMPACT ASSESSMENT

Staff has prepared an analysis of the impacts of a delay in implementation of the final rule limit. A one year delay, until January 1, 2006, for the less than or equal to 50 gallon units, an additional year delay until January 1, 2007 for greater than 50 gallon units, and a three year delay for direct-vent and power-vented units, will result in less emission reductions than projected for the original rule (Figure 1) until the year 2014. When emission reductions due to a new U.S. Department of Energy (DOE) efficiency requirement for water heaters are incorporated into the calculation, greater emission reductions are achieved for each new unit sold starting in January 2004.



\* PAR 1121 emission reductions include reduction due to new DOE energy efficiency requirements and reductions from the projects funded by the mitigation fee program.

The current mitigation fee program will offset some of the foregone reductions starting in 2005 (0.14 ton/day) and future projects financed by the mitigation program will provide additional (not yet quantified) reductions starting in 2006. Taking into account emission reductions from the DOE efficiency requirement and the mitigation fee program, the proposed delay of the final rule limit results in about 0.5 tons per day of nitrogen oxide emissions foregone in 2005, about 0.4 tons per day in 2006, and more than 0.1 tons per day in 2010, compared with the original rule. However by 2015, total emission reductions are greater because of the new DOE efficiency requirement (Figure 1). The proposed amended rule achieves a total reduction of 81% by 2015 compared with a 75% reduction in the original rule.

The delay in emission reductions of 0.4 ton per day in 2006 and 0.1 ton per day in 2010 will not jeopardize AQMD's PM10 or ozone attainment demonstration. The 2003 Air Quality Management Plan (AQMP) has a three ton per day set aside to account for delay in reductions when technical assessments for rules indicate that technology did not develop as anticipated.

In the Settlement Agreement for the 1999 AQMP amendment, a provision was included for findings of infeasibility in the event technology forcing rules are not able to be met. For the purposes of state implementation plan commitments, an infeasibility finding can be made if the proposed control technology is not reasonably likely to be available by the implementation date in question. As described in this staff report, it is infeasible for manufacturers to meet the final rule limit by January 1, 2005.

To mass produce water heaters at a lower NO<sub>x</sub> limit, there are several steps that require time. New burners and water heater designs must meet DOE efficiency standards, pass lint, dust and oil tests, as well as other safety measures. Changes to one component of the water heater often affect the design of other components. Once a satisfactory design is developed and tested, there are mandatory safety and reliability tests that must be done. Additional time is needed to change the production line in order to mass produce water heaters. It is infeasible for the January 1, 2005 date to be met due to the amount of technical work still needed. The remaining time is not sufficient to develop, test and produce water heaters. Staff has worked with the manufacturers and is recommending a one-year delay for conventional water heaters 50 gallon capacity and less, two years for conventional water heaters greater than 50 gallon capacity, and three years for direct-vent, power-vent, and power direct-vent water heaters. Staff is not recommending a full exemption from the interim and final rule limits for direct-vent and power-vented water heaters because technology is available to meet these limits and the proposed amended rule provides additional time to develop and test technology for these types of water heaters.

Staff recommends the Board make a finding of infeasibility at the September 3, 2004 public hearing. This staff report serves as a notice of intent to make infeasibility findings.

## **CHAPTER 1: BACKGROUND**

---

**INTRODUCTION**

**REGULATORY HISTORY**

**AFFECTED INDUSTRIES**

**REDUCING NO<sub>x</sub> EMISSIONS**

**TYPES OF WATER HEATERS**

## INTRODUCTION

Rule 1121 – Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters, was originally adopted in December 1978 and established a nitrogen oxide (NO<sub>x</sub>) emission limit of 40 ng/J for residential water heaters. In December 1999, the rule was amended to lower the nitrogen oxide (NO<sub>x</sub>) emission limits in the rule. The rule also required manufacturers to provide a report by July 1, 2003 on their progress toward meeting the final emission limit in the rule. Staff reviewed these reports and had meetings with representatives of water heater manufacturers and the Gas Appliance Manufacturers Association (GAMA). GAMA and the water heater manufacturers have requested a delay in the compliance date for the final rule limit, as well as an exemption for power vented and direct vent water heaters. Staff submitted a report to the Governing Board in January 2004 and the Board directed staff to proceed with evaluation for rule development.

## REGULATORY HISTORY

Rule 1121 was adopted by the AQMD's Governing Board on December 1, 1978. The objective of this rule is to reduce NO<sub>x</sub> emissions from natural gas-fired residential water heaters. Rule 1121 applies to manufacturers, distributors, retailers, and installers of residential natural gas-fired water heaters less than 75,000 Btu per hour in the Basin.

Starting in 1982, Rule 1121 required that gas-fired water heaters meet an emission limit of 40 ng/J of heat output for gas-fired residential water heaters. An emission limit of 50 ng/J was established for gas-fired mobile home water heaters. Although most AQMD rules that regulate NO<sub>x</sub> combustion sources are based only on an input-based NO<sub>x</sub> concentration emission limit, such as parts per million (ppm) of NO<sub>x</sub>, the NO<sub>x</sub> limit under Rule 1121 was expressed in nanograms of NO<sub>x</sub> per joule of heat output (ng/J). Rule 1121 uses these units to account for the energy efficiency of the water heater. Thus, provided that the water heater can meet the specified ng/J NO<sub>x</sub> limit, a more efficient water heater can have a higher NO<sub>x</sub> concentration.

In 1995, Rule 1121 was proposed to be amended to lower the emission limit for residential water heaters. At that time, manufactures asked the AQMD to delay a more stringent emission limit because they were initiating their efforts to develop technology to mitigate risk from flammable vapors. The AQMD agreed to delay development of a new emissions limit for the rule. However, the rule was amended to incorporate a new certification test protocol and require re-certification every three years unless the manufacturers participated in an AQMD approved NO<sub>x</sub> validation program. The new emission certification testing protocol, *NO<sub>x</sub> Compliance Testing for Natural Gas-Fired Water Heaters and Small Boilers*, replaced requirements for certification pursuant to ANSI standard Z21.10.1-1975. The new certification test protocol was developed jointly by various members of the American Gas Association (AGA), the Center of Emissions Research and Analysis, and AQMD staff. The 1995 Rule 1121 amendments retained the original NO<sub>x</sub> emission limits.

In December 1999, Rule 1121 was amended to reduce the NO<sub>x</sub> emission limit. The amendment reduced the NO<sub>x</sub> limit in two steps from 40 ng/J to 20 ng/J on July 1, 2002 and 10 ng/J on January 1, 2005. Alternate equivalent emission limits expressed in part per million were also added. The rule also required manufacturers to provide a report by July 1, 2003 on their progress toward meeting the final emission limit in the rule. The December 1999 amendment of Rule 1121 was estimated to result in an 8.3 tons/day reduction (75%) by 2015.

Rule 1121 was included in the Settlement Agreement for the 1999 AQMP amendment. The Settlement Agreement included a commitment to begin implementation of Rule 1121 by 2005. Up to a 1-year extension was allowed. The agreement allows for additional extensions if the Governing Board makes a finding of infeasibility.

## **AFFECTED INDUSTRIES**

There are currently four major water heater manufacturers in the United States that produce gas-fired residential type water heaters for sale in the District under a wide variety of brand names. The major manufacturers are American Water Heaters Company; A.O. Smith; Bradford-White Corporation; and Rheem Manufacturing Company. The manufacturing sites and headquarters for these water heater manufacturers are all located outside of California. In the last decade there has been consolidation within the industry. Several manufacturers have been purchased by larger corporations resulting in these four companies producing 99% of the residential water heaters sold in the District.

The four water heater manufacturing companies produce a wide variety of products including: boilers, electric and gas storage water heaters, instantaneous water heaters, and hot water storage tanks where water is heated by another source such as a boiler or by solar heating. These manufacturing companies also make combination solar and electric water heater tanks that can be used with other companies' solar collectors.

Based on data from Southern California Gas Company, there are approximately 4 million natural gas-fired water heaters with a heat input less than 75,000 Btu/h located in residences and mobile homes and 36,000 located in commercial establishments within the AQMD's jurisdiction. Other types of residential water heaters sold in the District are not subject to Rule 1121. Electric water heaters are not a combustion source and gas-fired instantaneous water heaters sold in the District have burners in a size range greater than those regulated by Rule 1121 (=75,000 Btu/h). The gas fired instantaneous water heaters sold in the District are regulated by AQMD Rule 1146.2. For locations needing only small amounts of heated water, small electric instantaneous water heaters are available.

Water heater manufacturers that intend to offer natural gas-fired water heaters for sale in the AQMD are required to test and obtain certification that each model is compliant. These requirements in the rule are not being changed.

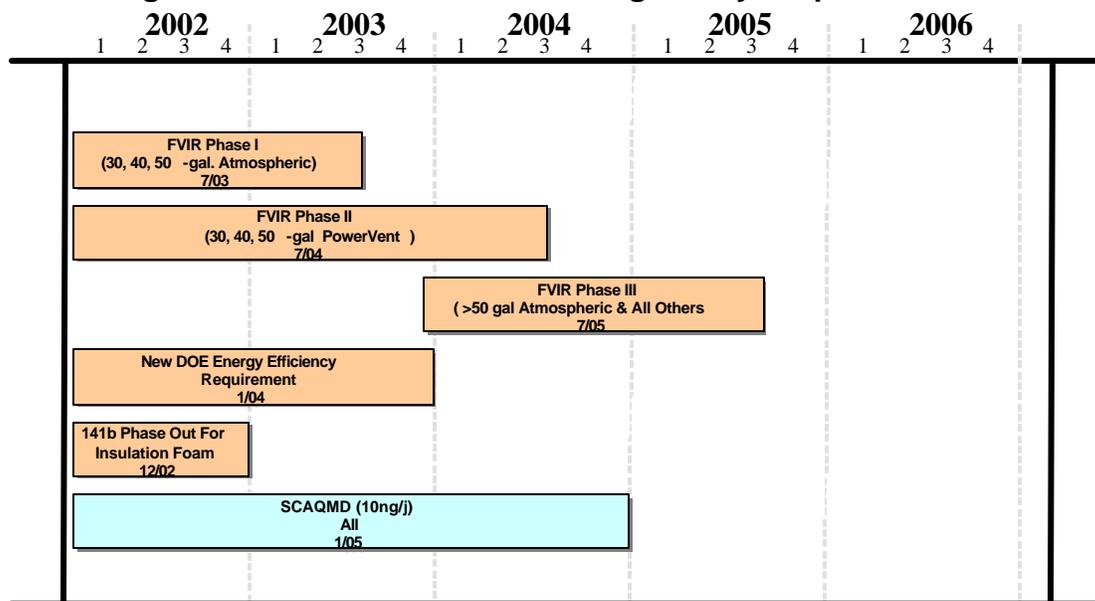
PAR 1121 is also a point of sale rule, which is enforced at the manufacturer, distributor, retailer and installer level. The current and proposed rule also allow units meeting the existing standard and

delivered to distributors and sales outlets before the compliance date to be sold to customers for up to six months after the compliance date. This provision assures a continuous supply of water heaters to the public and contractors.

The proposed amendments to Rule 1121 will provide manufacturers of gas fired residential water heaters additional time to comply with the final rule limit. They may choose to comply with the interim rule limit or they can elect to pay a mitigation fee. In any case, manufacturers must still manufacture compliant units up to and including 50 gallon capacity meeting the final rule limit by January 1, 2006 and compliant units greater than 50 gallon capacity by January 1, 2007.

In the past five years, water heater manufacturers have redesigned water heaters to meet new regulatory requirements. They have developed technology to resist ignition of flammable vapors in the air supply to the water heater (industry standard), changed blowing agents for creating foam insulation (U.S. EPA), and increased the minimum energy efficiency for all water heaters (U.S. Department of Energy). Figure 2 illustrates the compliance dates for these regulatory requirements.

**Figure 2 - Current Water Heater Regulatory Requirements**



## REDUCING NO<sub>x</sub> EMISSIONS

There are a variety of burner types that have been tested by manufacturers to meet the final emission limit for Rule 1121. For residential water heaters, manufacturers have focused on premixed atmospheric burners. These burners mix fuel and air before the mixture is ignited at the surface of the burner.

The most promising technologies for residential water heaters are premixed radiant burners. In premixed radiant burners, air and fuel are combusted slowly on the porous surface of the burner at the air-gas interface. Radiant burners are generally made of ceramic or metal fibers. Radiant burners evenly distribute heat which stabilizes the flame and prevents "hot spots." When hot spots are prevented, NO<sub>x</sub> emissions are minimized.

There are a variety of burner and material manufacturers that have developed atmospheric, pre-mixed, ceramic or metal fiber matrix burners. Manufacturers of ceramic and metal fiber radiant burners and other types of gas-fired appliances have burners with emission levels at or below the interim (20 ng/J) and final (10 ng/J) rule limits. These low NO<sub>x</sub> burners are manufactured for a wide range of applications. Available information shows that the interim and final rule limits are achievable in both natural draft and fan-assisted applications. Radiant burners can meet the rule limits within a range of conditions (i.e., amount of excess air) and use a variety of ignition technologies.

Water heater manufacturers are currently working with burner manufacturers to develop burners that will meet the 10 ng/J emission limit. However, they require additional time to develop and test burners, perform reliability and safety testing, and convert production lines. It is not feasible to meet the January 1, 2005 compliance date in the rule. Staff is proposing a one to three year delay of the final rule limit based upon size and type of water heater.

## **TYPES OF WATER HEATERS**

There are a wide variety of products available to provide hot water in residential and commercial applications. Proposed Amended Rule 1121 only regulates gas-fired water heaters less than 75,000 Btu/h. The four companies making equipment subject to this rule and other manufacturers produce boilers, electric and gas-fired storage water heaters, electric and gas-fired instantaneous water heaters, and hot water storage tanks where water is heated by another source such as a boiler or by solar heating. Water heater manufacturing companies also make combination solar and electric water heater tanks. In other countries, combination solar and gas-fired water heaters are also available.

Within the category of gas-fired storage water heaters, there are four types which differ in the way combustion air and combustion exhaust are handled. In conventional gas-fired storage water heaters, combustion air enters at the bottom of the units and combustion products are vented through an exhaust duct to the outside of the building. Power-vent water heaters are similar to conventional water heaters except that they have a blower (fan) at the top of the water heater to assist in the expulsion of exhaust gasses to the outside of the building. The combustion air for direct-vent water heaters comes from outside the building through a duct to the outside of the building. Power direct-vent water heaters have a duct to the outside for combustion air and have a blower on the exhaust duct to assist in the expulsion of exhaust gases.

Each type of water heater has advantages. For example, solar and gas-fired water heaters sold in Europe are used in locations without access to utilities and where liquefied petroleum gas is available. Boilers are often used in colder climates to provide both hot water and comfort heating. The local price

of electricity and natural gas is often the deciding factor in the choice of a gas-fired or electric water heater.

Each system for water heating results in emissions of nitrogen oxides. Electric water heaters do not emit nitrogen oxides themselves, but they result in increased power plant emissions. Solar water heating is the technology with the greatest potential to reduce emissions from the heating of hot water for residential and commercial use. A variety of solar water heating systems are available. However, for most applications an additional source of heat is needed when sunlight is not available.

The Department of Energy has studied the energy use and economics of solar water heating. Solar water heating systems are more expensive to install than either electric or gas-fired water heaters. However, combination solar/electric water heating systems use less energy and are typically more cost-effective than electric water heaters over the lifetime of the system.

Solar water heating saves energy and reduce emissions in comparison with a natural gas-fired water heater. However, solar/electric water heating is usually not cost-effective in comparison to natural gas-fired water heaters at the current price of natural gas. Solar water heating can be cost-effective in the construction of new buildings. When evaluating installation in existing homes, there are additional factors to consider. Solar water heating systems typically require larger storage tanks (80 to 120 gallon size range). The larger size is needed for storage of hot water for the evening and morning hours and for keeping the solar collector system from overheating. Many existing homes are not able to accommodate these larger storage tanks without remodeling.

## **CHAPTER 2: SUMMARY OF PROPOSED AMENDED RULE 1121**

---

**OVERVIEW**

**PROPOSED AMENDED RULE 1121 REQUIREMENTS**

## OVERVIEW

Rule 1121 – Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters, was amended in December 1999 to lower the nitrogen oxide (NO<sub>x</sub>) emission limits in the rule. The amendment reduced the NO<sub>x</sub> limit in two steps from 40 ng/J to 20 ng/J on July 1, 2002 and 10 ng/J on January 1, 2005. All four subject manufacturers elected to pay an emission mitigation fee, an option provided in the rule, in lieu of meeting the July 1, 2002 interim limit.

The rule also required manufacturers to provide a report by July 1, 2003 on their progress toward meeting the final emission limit in the rule. Staff has received and reviewed these reports and had meetings with representatives of water heater manufacturers and the Gas Appliances Manufacturers Association (GAMA). Staff reviewed the reports and held meetings with manufacturers to discuss their progress. Staff submitted a report to the Governing Board in January 2004 and the Board has directed staff to proceed with evaluation for rule development.

In their progress reports and subsequent meetings, the manufacturers have requested a delay in the compliance date for the final rule limit for most units and an exemption for power and direct vented water heaters. GAMA and the manufacturers have proposed that the 10 ng/J limit for atmospheric residential type water heaters of 50 gallons or less capacity (typically 30, 40 or 50 gallon) be delayed one year until January 2006. In addition, they have also proposed a two year delay for residential water heaters greater than 50 gallon capacity (60, 65, 75, 100 and 120 gallon capacity). While some units greater than 50 gallons capacity have burners rated at less than 75,000 Btu/h, most have larger burners and are exempt from Rule 1121. They are subject to AQMD Rule 1146.2 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers, with emission limits of 40 ng/J for equipment rated 75,000 Btu/h to 400,000 Btu/h. Staff intends to revisit Rules 1146, 1146.1 and 1146.2 in 2005 to ensure the latest best available retrofit control technology (BARCT) is incorporated. Currently, units greater than 50 gallons and direct vented and power vented units, in total, make up about 6% of sales in the District.

GAMA and the manufacturers have proposed exempting direct vented and power vented units (with an exhaust fan) from the final and interim rule limits. Direct vented units obtain their combustion air directly from outside the building through a ventilation duct that is coaxial with the exhaust duct. Direct vent and power vented units account for about 2% of sales in the District. Currently, units greater than 50 gallons and direct vented and power vented units, in total, make up about 6% of sales in the District.

GAMA and the manufacturers have also proposed extending the mitigation fee program for the time period of the delay. They have also proposed simplifying the fee by changing it to one based on the number of units sold in the District. The current emission based fee is equivalent to about \$1.82 per unit sold. GAMA and the manufacturers originally proposed the fee be set at \$2.50 per unit for emissions down to the final rule limit. Project proposals submitted to the AQMD under the Rule 1121 mitigation program have cost-effectiveness of approximately \$16,000 per ton for one year projects and \$8,000 per ton for two year projects. Staff is proposing a fee of \$3.00 per water heater (based on the \$8,000 per ton for two year projects) to more closely reflect the cost of the projects needed to mitigate

emissions. Staff is also proposing that up to 5% of this fee be used to offset AQMD's administrative costs. This is acceptable to the manufacturers.

The reasons for requesting the delay are both technical and business related. The manufacturers have focused much of their efforts on meeting a new flammable vapor ignition resistance (FVIR) standard, new U.S. Department of Energy (DOE) efficiency requirements (10 CFR 430) and changing over to a new foam blowing agent, which is not an ozone depleting compound, for insulation foam. They require additional time to integrate the new burner systems into the new design water heaters. Therefore, compliance by January 2005 is infeasible.

## **PROPOSED AMENDED RULE 1121 REQUIREMENTS**

Staff is proposing to extend the compliance date for the final rule limit and continue the mitigation fee as a compliance option for the interim rule limit of 20 ng/J. Manufacturers would have to meet the final emission limit in the rule by January 1, 2006 for conventional water heaters of 50 gallon capacity or less, by January 1, 2007 for conventional water heaters greater than 50 gallon capacity and by January 1, 2008 for direct-vent, power-vent, and power direct-vent water heaters. Manufacturers have requested an additional year delay for units greater than 50 gallons because these larger units typically use different (larger) burners and the combustion process must be fine tuned for each combination of burner and combustion chamber. While the manufacturers have requested an exemption for direct-vent, power-vent and power direct-vent water heaters, staff is proposing a three year delay for these types of water heaters so manufacturers will have additional time to develop technology to meet the final emission limit in these types of water heaters. Information available from manufacturers of burners and other appliances indicates that it is possible to meet the emissions levels of the interim and final rule limits in a wide range of applications and conditions.

To mass produce water heaters at a lower NO<sub>x</sub> limit, there are several steps that require time. New burners and water heater designs must meet DOE efficiency standards, pass lint, dust and oil tests, as well as other safety measures. Changes to one component of the water heater often affect the design of other components. Once a satisfactory design is developed and tested, there are mandatory safety and reliability tests that must be done. Additional time is needed to change the production line in order to mass produce water heaters. It is infeasible for the January 1, 2005 date to be met due to the amount of technical work still needed. The remaining time is not sufficient to develop, test and produce water heaters. Staff has worked with the manufacturers and is recommending a one-year delay for conventional water heaters 50 gallon capacity and less, two years for conventional water heaters greater than 50 gallon capacity, and three years for direct-vent, power-vent, and power direct-vent water heaters. Staff is not recommending a full exemption from the interim and final rule limits for direct-vent and power-vented water heaters because technology is available to meet these limits and the proposed amended rule provides additional time to develop and test technology for these types of water heaters. The above rationale for not meeting the final rule limit (10 ng/J) is also applicable to the interim limit of 20 ng/J, i.e., there was not sufficient time to determine a satisfactory design to meet DOE efficiency standards, pass lint, dust and oil tests, as well as safety measures and then to show mandatory safety and reliability testing by the compliance date. As mentioned earlier, the FVIR, DOE efficiency requirements (10 CFR 430) and changing over to a new foam blowing agent, which is not an ozone

depleting compound, for insulation foam did not provide enough time for the water heater manufacturers to meet the interim limit and therefore, they decided to participate in the Mitigation Fee Program so they could concentrate on the above safety issues.

A final progress report on direct-vent, power-vent, and power direct-vent water heaters will be required of manufacturers of these types of water heaters nine months before the January 1, 2008 compliance date. The final progress reports will provide detailed information regarding the manufacturers efforts to comply with the final emission limit for direct-vent, power-vent, and power direct-vent water heaters.

The proposed rule language also includes minor changes to address the transition from the existing mitigation fee program to the new proposed fee program on date of adoption. The proposed rule also allows new units meeting the existing standard and manufactured before the compliance date for the new standard to be sold to customers for up to six months after the compliance date.

The current emission based fee is equivalent to about \$1.82 per unit sold. The mitigation fee for the proposed rule amendment (\$3.00 per unit) reflects the current cost of reducing emissions from recent emission credit generation projects.

The cost-effectiveness of proposed projects approved for the water heater mitigation program is approximately \$16,000 per ton of NO<sub>x</sub> reduced each year. For two year projects, this is equivalent to about \$8,000 per ton of NO<sub>x</sub> reduced. A cost-effectiveness of \$8,000 per ton (\$4.00/pound) is equivalent to a fee of about \$2.70 per unit for emissions down to the interim rule limit.

The new proposed mitigation fee program will continue to be used through the extension dates and also through the sell through period. Staff also proposes to allow the Executive Officer to recover AQMD's administrative costs in fee collection and administering emission reduction projects by using no more than 5% of the fees collected.

## **CHAPTER 3: IMPACT ASSESSMENT**

---

**IMPACT ANALYSIS**

**CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ANALYSIS**

**SOCIOECONOMIC ASSESSMENT**

**~~DRAFT FINDINGS UNDER CALIFORNIA HEALTH & SAFETY CODE  
SECTION 40727~~**

**INCREMENTAL COST-EFFECTIVENESS**

**COMPARATIVE ANALYSIS**

## IMPACT ANALYSIS

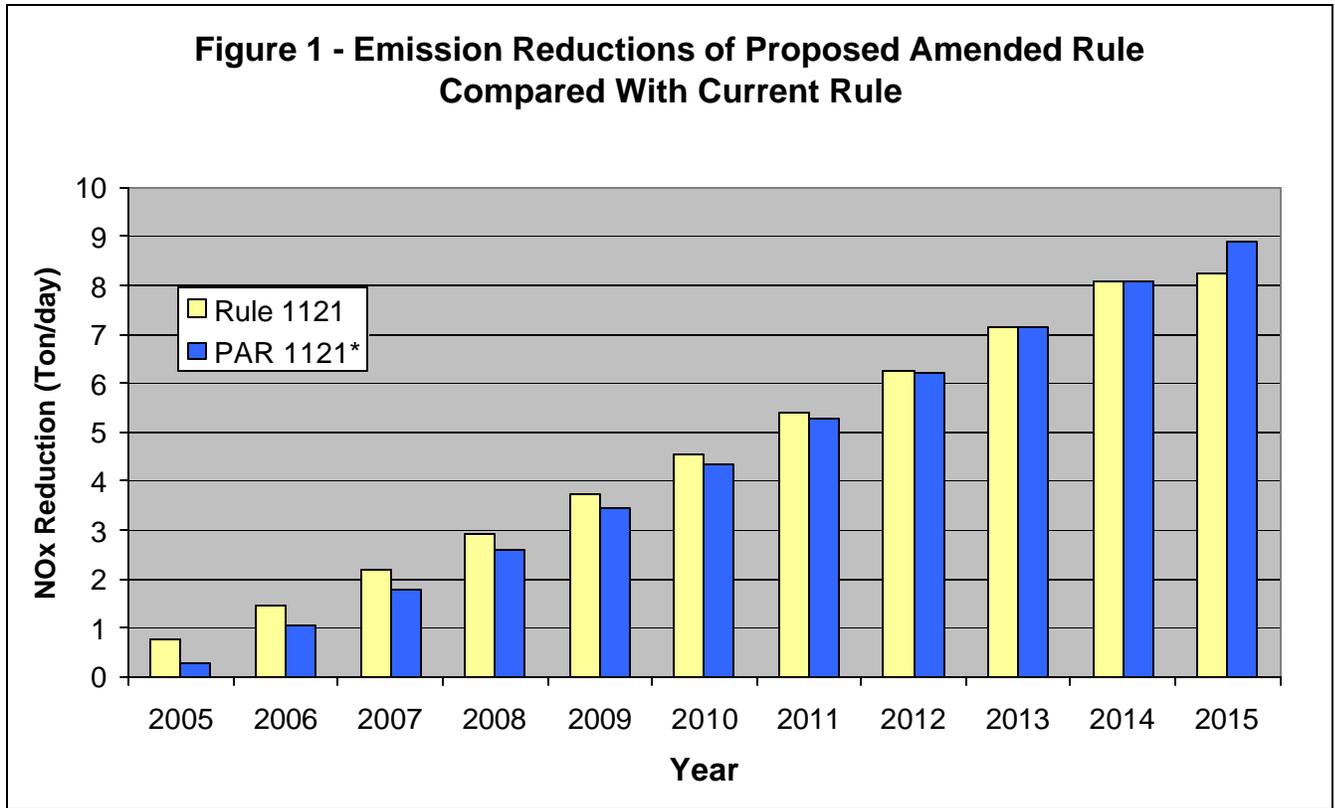
Staff has prepared an analysis of the impacts of a delay in implementation of the final rule limit. When emission reductions due to a new U.S. Department of Energy (DOE) efficiency requirement for water heaters are incorporated into the calculation, greater emission reductions on a per unit basis are achieved for each new unit sold starting in January 2004. The new efficiency standard results in greater reductions than projected for the original rule after all older units are replaced by new more efficient units, but this does not make up for the delay in reductions until the year 2014.

A one year delay, until January 1, 2006, for the less than or equal to 50 gallon units, an additional year delay until January 1, 2007 for greater than 50 gallon units, and a three year delay for direct-vent, power-vent and power direct-vent units will result in less emission reductions than projected for the original rule until 2014 (Figure 1).

The current rule allowed water heater manufacturers an option of either meeting the interim emission limit of 20 ng/J or paying a mitigation fee to the District to later fund NOx emission reduction programs. As a result, these mitigation fee programs would inherently have a lag time in achieving emission reductions. Over the life of these mitigation fee program projects, more emission reductions are realized, although not necessarily during the same year as the mitigation fee payment. The current Mitigation Fee Program has been funded by the water heater manufacturers at \$805,000 for a 15 month period from July 2002 to October 2003. Based on the anticipated \$5,400 per ton cost-effectiveness, the total equivalent amount of emissions reductions would be 149 tons.

In June 2004, the Governing Board approved funds of \$804,197 using the Rule 1121 Mitigation Fee Program for four projects which will have a life expectancy of well over 15 years and with annual emission reductions of 51 tons, starting in 2005. These reductions during the life time expectancy for these projects alone would more than adequately recover the total 149 tons of emissions forgone. Additional monies will still be accumulated until January 1, 2005, which would provide additional monies to purchase emission reductions to offset any forgone emissions. Also, since the mitigation fee program is proposed to be extended with an increase in the mitigation fee to reflect the current cost of reducing emissions from recent emission credit generation projects, further and timelier emission reductions are expected during the extended mitigation fee program.

The current mitigation fee program will offset some of the foregone reductions starting in 2005 (0.14 tons/day) and future projects financed by the mitigation program will provide additional (not quantified) reductions starting in 2006. When emission reductions due to the new U.S. Department of Energy (DOE) efficiency requirement for water heaters and the mitigation projects are incorporated into the calculation, the delay of the final limit and resulting forgone emission reductions are further mitigated by ~~results in~~ about 0.4 tons per day ~~more~~ of nitrogen oxide emissions in 2006 and more than 0.1 tons per day in 2010 compared with the ~~original rule~~ 10 ng/J requirement.



\* The emissions for PAR 1121 include the reduction due to the new DOE energy efficiency requirement and reductions from projects funded by the mitigation fee program. The DOE efficiency requirement results in an 8% reduction in emissions. The baseline inventory includes the growth assumptions from the staff report for the 1999 rule amendment. The emission reductions are calculated based on the emission standard for each year and the assumption that 10% of the existing water heaters are replaced each year (10 year operating life).

The SIP commitment for this rule in 2006 and 2010 will not be met directly by emission reductions from implementing this rule. The attainment demonstration and State Implementation Plan (SIP) commitment will not be compromised because the 2003 AQMP included a three ton set aside to account for delays in implementation when technical assessments for rules indicates that technology did not develop as anticipated. A portion of those emissions will be used to offset reductions that would have occurred if the technology was available. However by 2015, total emission reductions are greater because of the DOE efficiency requirement (Figure 1, PAR 1121). The proposed amended rule achieves a total reduction of 81% by the year 2015 compared with a 75% reduction projected in the original rule.

The Settlement Agreement for the 1999 AQMP amendment includes a commitment to begin implementation of Rule 1121 by 2005. Up to a 1-year extension is allowed. In the Settlement Agreement, a provision was included for findings of infeasibility in the event technology forcing rules are not able to be met. For the purposes of state implementation plan commitments, an infeasibility finding can be made if the proposed control technology is not reasonably likely to be available by the implementation date in question. As described in this staff report, it is infeasible for manufacturers to meet the final rule limit by January 1, 2005. Staff recommends the Board make a finding of infeasibility at the September 3, 2004 public hearing. This staff report serves as a notice of intent to make infeasibility findings. Staff is recommending a 1-year delay of the final rule limit for water heaters 50 gallons or less, which represents approximately 94 percent of the units sold in the Basin. A 2-year

delay is proposed for greater than 50 gallon water heaters and a 3-year delay is proposed for direct-vent, power-vent, and power direct-vent units. By 2010, emission reductions of 7.6 tons per day (tpd) were assumed for the 1999 AQMP amendment. This was based on the inventory at that time, which estimated the remaining emissions from water heaters of 6.4 tpd in 2010. Since the 1999 AQMP amendment, the inventory has been adjusted to reflect new federal Department of Energy efficiency standards. More efficient water heaters have approximately 8 percent lower NO<sub>x</sub> emissions. Taking this into consideration, the remaining emissions for the year 2010 under the proposed amendments are estimated at 5.7 tpd, which is lower than the 1999 AQMP amendment projection for that year.

Even though staff is recommending more than a 1-year delay for approximately 6 percent of the water heaters, the remaining emissions in the year 2010 under the proposal will be less than the remaining emissions in the year 2010 for the 1999 AQMP amendment. Therefore, the SIP commitment is still met under PAR 1121.

## **CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ANALYSIS**

Pursuant to the California Environmental Quality Act (CEQA) and AQMD Rule 110, the AQMD has prepared environmental documentation evaluating potential significant adverse environmental impacts associated with implementing the proposed amendments to Rule 1121. A draft Subsequent Environmental Assessment (SEA) was prepared and released for a 45-day public review and comment period from June 4, 2004 to July 20, 2004. A Final SEA will be prepared for the September 3, 2004 public hearing.

## **SOCIOECONOMIC ASSESSMENT**

A socioeconomic assessment has been prepared and is included in Appendix C of this report.

## **~~DRAFT FINDINGS UNDER CALIFORNIA HEALTH & SAFETY CODE SECTION 40727~~**

~~California Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report. In order to determine compliance with Sections 40727, 40727.2 require a written analysis comparing the proposed amended rule with existing regulations.~~

~~The following provides the draft findings.~~

~~**Necessity:** A need exists to amend Rule 1121 to address a need for additional time to develop the technology necessary to meet the final emission limit in the rule.~~

~~**Authority:** The AQMD obtains its authority to adopt, amend, or repeal rules and regulations from California Health and Safety Code Sections 39002, 40000, 40001, 40440, 40440.1, 40702, 40725 through 40728, 41508, and 41700.~~

**Clarity:** ~~PAR 1121 has been written or displayed so that its meaning can be easily understood by the persons affected by the rule.~~

**Consistency:** ~~PAR 1121 is in harmony with, and not in conflict with or contradictory to, existing federal or state statutes, court decisions or federal regulations.~~

**Non-Duplication:** ~~PAR 1121 does not impose the same requirement as any existing state or federal regulation, and is necessary and proper to execute the powers and duties granted to, and imposed upon the AQMD.~~

**Reference:** ~~In amending this rule, the following statutes which the AQMD hereby implements, interprets or makes specific are referenced: Health and Safety Code sections 39002, 40001, 40702, 40440(a), and 40725 through 40728.5.~~

## INCREMENTAL COST-EFFECTIVENESS

Health and Safety Code Section 40920.6 requires an incremental cost-effectiveness analysis for Best Available Retrofit Control Technology (BARCT) rules or emission reduction strategies when there is more than one control option which would achieve the emission reduction objective of the proposed amendments, relative to ozone, CO, SO<sub>x</sub>, NO<sub>x</sub>, and their precursors. The proposal to amend Rule 1121 does not require emission controls or emission reduction strategies and does not impact existing equipment. Therefore, the incremental cost-effectiveness analysis requirement does not apply.

## COMPARATIVE ANALYSIS

Under Health and Safety Code Section 40727.2, the AQMD is required to perform a comparative written analysis when adopting, amending, or repealing a rule or regulation. The comparative analysis is relative to existing federal requirements, existing or proposed AQMD rules and air pollution control requirements and guidelines which are applicable to industrial, institutional, and commercial boilers, steam generators, and process heaters.

The AQMD staff is not aware of any state or federal requirements regulating air pollution that are applicable to Rule 1121-type units. PAR 1121 does not impose a new emission limit or standard, make an existing limit or standard more stringent, or impose new or more stringent monitoring, reporting or recordkeeping requirements. Since units subject to PAR 1121 do not require permits to operate, Best Available Control Technology requirements under the AQMD's New Source Review Program are not applicable.

## **CHAPTER 4: CONCLUSIONS**

---

### **SUMMARY**

## SUMMARY

The Settlement Agreement for the 1994 SIP requires the District to amend Rule 1121 by January 2000 with an implementation date beginning in 2005 to achieve 7.6 tons per day reduction by 2010 as reported in the 1997 AQMP inventory. It allows an extension of one year. A technical infeasibility finding needs to be made if the District needs to extend the implementation date beyond 2005.

Staff is proposing to extend the compliance date for the final rule limit and continue the mitigation fee as a compliance option for the interim rule limit of 20 ng/J. Manufacturers would have to meet the final emission limit in the rule by January 1, 2006, for conventional water heaters of 50 gallon capacity or less and by January 1, 2007, for conventional water heaters greater than 50 gallon capacity. Staff is proposing a three year delay, until January 1, 2008, for direct-vent, power-vent, and power direct-vent water heaters. However, due to the energy efficiency standards of the California Department of Energy Commission, the proposed amendment would continue to achieve at least 7.6 tons per day by 2010 (see Appendix A).

Staff proposes to set the fee for the mitigation program in the rule at \$3.00 per unit (current fee is equivalent to \$1.82 per unit) to reflect current control costs and to extend the mitigation fee through the rule extension and sell through dates. Staff also proposes to allow the Executive Officer to recover administrative costs of up to 5% for administering emission reduction projects and for the mitigation fee program.

The proposed rule language also includes minor changes to address the transition from the existing mitigation fee program to the new proposed fee program on date of adoption. The proposed rule also allows new units meeting the existing standard to be sold to customers for up to six months after the compliance date for the new standard.

## **REFERENCES**

---

## REFERENCES

SCAQMD, 2004. *Interim Progress Report from Natural Gas-fired Water Heater Manufacturers to Meet the Final Emission Limit for Rule 1121*. South Coast Air Quality Management District, January 2004.

SCAQMD, 1999. *Staff Report on Proposed Amended Rule 1121*. South Coast Air Quality Management District, November 1999.

SCAQMD, 1996. *1997 Air Quality Management Plan, Appendix IV-A, Stationary and Mobile Source Control Measures*, South Coast Air Quality Management District, November 1996.

SCAQMD, 1995. *Staff Report on Proposed Amended Rule 1121*. South Coast Air Quality Management District, March 1995.

U. S. Department of Energy, Energy Efficiency and Renewable Energy website (<http://www.eere.energy.gov>), accessed July 7, 2004.

## **APPENDIX A: PAR 1121 EMISSION INVENTORY**

---

### Original Rule Inventory

#### Rule 1121: (20 ng/J in 2003; 10 ng/J in 2005)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Inventory (ton/day)	9.0	9.1	<b>9.2</b>	9.4	9.6	9.8	<b>10.0</b>	10.2	10.4	10.6	10.8	11.0
Reduction - Interim Limit	(1.2*)	(1.2*)	(1.2*)	(1.2*)	(1.2*)	(1.2*)	(1.2*)	(1.2*)	(0.8*)	(0.3*)		
Reduction (10 ng/J)		0.8	1.4	2.2	2.9	3.7	4.5	5.4	6.3	7.2	8.1	8.3
Total Reductions	0.0	0.8	<b>1.4</b>	2.2	2.9	3.7	<b>4.5</b>	5.4	6.3	7.2	8.1	8.3
Remaining	9.0	8.3	7.7	7.2	6.7	6.1	5.5	4.8	4.1	3.4	2.7	2.8
Overall Control Efficiency	0%	8%	<b>16%</b>	23%	31%	38%	<b>45%</b>	53%	60%	68%	75%	75%

\* Emission reduction if manufacturers had produced water heaters meeting the interim rule limit instead of using the mitigation fee program.

### Proposed Amended Rule Including New DOE Efficiency Standard

#### PAR 1121

	2004	2005	2006	2007	2008	2009	2010**	2011	2012	2013	2014	2015
Inventory (ton/day)	9.0	9.1	<b>9.2</b>	9.4	9.6	9.8	<b>10.0</b>	10.2	10.4	10.6	10.8	11.0
Reduction - Mitigation Fee ***		0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	
Reduction 10 ng/J & DOE ****	< 0.1	0.1	0.9	1.6	2.5	3.3	4.2	5.1	6.1	7.1	8.0	8.9
Total Reductions	< 0.1	0.3	<b>1.0</b>	1.8	2.6	3.5	<b>4.4</b>	5.3	6.2	7.2	8.1	8.9
Remaining	8.9	8.8	8.1	7.6	7.0	6.3	5.6	4.9	4.2	3.5	2.7	2.1
Overall Control Efficiency	1%	3%	<b>11%</b>	19%	27%	35%	<b>44%</b>	52%	60%	68%	75%	81%

\*\* 1997/1999 SIP Equivalent Emission Reductions for 2010 are calculated as follows:

CM#99 CMB-06 Emission Data:	PAR 1121 remaining emissions = 5.6
2010 Baseline = 14 TPD	Therefore the SIP equivalent reduction is:
Reduction = 7.6 TPD	= 14.0 - 5.6 TPD
Remaining = 6.4 TPD	= 8.4 TPD

\*\*\* Mitigation fee projects assumed to have a project lifetime of ten years.

\*\*\*\* The baseline emissions inventory and growth assumptions are from the 1999 rule amendment. The rule reductions are based on the NOx emissions standard for each year and a 10 year operating life (10% of the water heaters are replaced each year - when they are 10 years old). The revised DOE efficiency standard results in up to 8% less fuel used and 8% less NOx emissions per water heater.

## **APPENDIX B: PUBLIC COMMENTS**

---

## PUBLIC COMMENTS

On June 17, 2004, a public workshop and CEQA scoping meeting was held at the SCAQMD headquarters to solicit information and suggestions from the public regarding Proposed Amended Rule 1121. Five people attended the workshop and provided comments. Additional comments were also received by staff prior to and subsequent to the public workshop.

## PUBLIC WORKSHOP COMMENTS

1.     Comment:     How many manufacturers are there?

          Response:    There are four companies in the country that produce gas-fired storage water heaters.
  
2.     Comment:     What emission level do the units meet that manufacturers pay the mitigation fee for and what is the total emissions forgone?

          Response:    The water heaters that manufacturers must pay the fee for meet the 40 ng/J limit. If you use the difference between that limit and the final limit (10 ng/J) to estimate the emissions forgone for the number of units sold each year, it is about 0.75 tons per day. The difference between 40 ng/J and the interim limit (20 ng/J) would be about 0.5 tons per day of emissions.
  
3.     Comment:     It does not look like the Department of Energy requirement for increased energy efficiency is taken into account in the emissions estimates. Is the life-cycle of the product taken into account?

          Response:    The staff report has been revised to more clearly state that the efficiency requirement and the life-cycle of the products are taken into account. In addition, the emission calculations have been refined to reflect that reductions from the DOE requirement occur during 2004 and 2005.

                          The new energy efficiency requirement is assumed to reduce emissions from each new water heater by eight percent (8%). The life-cycle of the product is also taken into account. The assumption used is that ten percent (10%) of the existing units are replaced with new units each year. The units are replaced when they are 10 years old.
  
4.     Comment:     The report states that the direct-vent and power vent units tend to be larger and have greater emissions. That is not necessarily true.

Response: The comment has been addressed in the Staff Report. Staff has reviewed a sample of source tests for these types of water heaters and confirmed that emissions are similar or lower than conventional water heaters.

## OTHER PUBLIC COMMENTS

5. Comment Require the revised mitigation fee calculation (\$3.00 per water heater) to become effective on or after January 1, 2005 instead of on the date of adoption.

Response Staff has revised the proposed amended rule to have the mitigation fee payment calculation change on January 1, 2005, as requested.

6. Comment: GAMA and water heater manufactures have requested an exemption for direct-vent, power direct-vent and power-vented water heaters from the final and interim emission limits. The Subsequent Environmental Assessment did not use the industry proposal for one of the alternatives. The combustion chamber, burners and combustion process are different than for the majority of conventional water heaters and it will require additional research and development to comply with the final limit. These categories of water heaters only account for about 2% of sales in the AQMD and account for only 2% of emissions.

The proposed amended rule does not differentiate between conventional units and direct-vent and power-vented water heaters. The development of technology to meet the final emission limit and flammable vapor ignition resistance (FVIR) requirements for direct-vent and power-vented units would be concurrent. The industry would find it difficult to develop water heaters that meet the final emission limit and the FVIR requirements at the same time.

Response: Manufacturers of ceramic and metal fiber radiant burners and other types of gas-fired appliances have burners with emission levels at or below the interim (20 ng/J) and final (10 ng/J) rule limits. These low NO<sub>x</sub> burners are manufactured for a wide range of applications. Available information shows that the interim and final rule limits are achievable in both natural draft and fan-assisted applications. Radiant burners can meet the rule limits within a range of conditions (i.e., amount of excess air) and use a variety of ignition technologies. However, water heater manufacturers have not provided sufficient information why low NO<sub>x</sub> burners in direct-vent and power-vented water heaters are not feasible and cannot meet either the final limit (10 ng/J) or the interim limit (20 ng/J).

Staff has no new information at this time regarding the difference in cost of a changeover to a different burner system for these types of water heaters compared with conventional water heaters. Based on industry sales information, staff estimates that in the AQMD there are at least 80,000 direct-vent and power-

vented residential water heaters in the size range regulated by Rule 1121. These categories of water heaters represent about 2% of sales or about 8,000 water heaters sold in the Basin per year. This is a large number of water heaters.

The upcoming PM 2.5 attainment requirement by 2014-2015 requires all feasible NOx reductions. Recognizing that current regulatory requirements and research and development may require more time, staff proposes this deadline be extended for three years.

Table 5-1 in the draft SEA is a summary of the project alternatives which were analyzed pursuant to CEQA Guidelines §15126.6. These alternatives were developed by modifying specific components of the proposed project. Pursuant to CEQA Guidelines 15126.6, an environmental document shall describe a range of reasonable alternatives to the project which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An environmental document need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that would foster informed decision-making and public participation. Further, because an environmental document must identify ways to mitigate or avoid the significant effects that a project may have on the environment, the discussion of alternatives shall focus on alternatives to the project which are capable of avoiding or substantially lessening any significant effects of the project.

When developing alternatives, staff attempted to craft an alternative consistent with the industry proposal based upon the information available at that time, taking into consideration State Implementation Plan commitments for Rule 1121. The specific alternative recommended by the commentator is not within the scope of the analysis of alternatives because it would result in emission reductions foregone greater than any of the alternatives analyzed. If the staff proposal for proposed amended Rule 1121 is adopted by the Board, there is a commitment in the rule for a future technology report back to the board. Based upon available information at that time, the Board could direct staff to promulgate further amendments to Rule 1121 that are more consistent with the industry proposal.

- |    |          |   |
|----|----------|---|
| 7. | Comment  | Industry has requested an additional progress report be included in the rule.   |
|    | Response | Staff has proposed an additional progress report in the rule for direct-vent and power-vented water heaters nine months prior to the final compliance date for these water heaters. |
| 8. | Comment  | LNG fuels will be used in greater quantities in the future. It is not known how these fuels will affect low NOx burner performance.   |

- Response Thank you for the comment. The Rule 1121 emission limits apply to natural gas-fired residential type water heaters and the rule does not differentiate based on fuel quality.
9. Comment The increase cost of gas water heaters may cause consumers to switch to electric water heaters and could result in increased generation of NOx.
- Response Gas-fired water heaters outsell electric units in the AQMD because of the local difference in the cost of heating water with gas versus electricity. While there are emissions associated with the use of electric water heaters, the power plants in the AQMD are controlled to the level of BARCT or BACT and are among the lowest polluting. Furthermore, power plants are under RECLAIM; therefore, any potential increase in emissions will be capped by the program.

## **APPENDIX C: SOCIOECONOMIC ASSESSMENT**

---

## SOCIOECONOMIC ASSESSMENT

There are currently four major manufacturers of gas-fired, tank-type water heaters. According to data from the water heater manufacturers as of 2003, there were approximately 328,600 water heaters sold with 50 gallons or less capacity and 17,300 water heaters sold with more than 50 gallons capacity in the district annually.<sup>1</sup> If the July 1, 2002 interim limit (20 ng/J) had been achieved, these water heaters would have resulted in approximately 116 tons per year of NOx emission reductions.

In lieu of complying with the July 1, 2002 limit, the four manufacturers have opted to pay a mitigation fee at \$5,400 per ton of NOx (equivalent to \$1.82 per water heater). Under the existing rule, these manufacturers may continue the payment until January 1, 2005 when the final limit (10 ng/J) becomes effective. The mitigation fee under the proposed amendments to Rule 1121 is based on \$3 per water heater sold as opposed to a “per ton” basis. In addition, the final compliance limit is extended to January 1, 2006 for water heaters with 50 gallons or less, to January 1, 2007 for those with more than 50 gallons, and to January 1, 2008 for direct vented and power vented water heaters regardless of their sizes.

The Environmental Assessment of Proposed Amended Rule 1121 evaluates the staff proposal and two other alternatives. Under Alternative B, the final compliance date will be January 1, 2006 for all the water heaters. Alternative C has January 1, 2007 as the final compliance date for water heaters with 50 gallons or less and January 1, 2008 for those more than 50 gallons and exempts direct vented and power vented water heaters from the 10 ng/J final emission limit. Other aspects of the proposed amendments remain intact under Alternatives B and C.

The proposed amendments will take effect upon their adoption, which is currently scheduled for September 2004. The socioeconomic analysis of the proposed amendments herein examines the amounts of mitigation fee payments up to the final compliance dates by assuming that the four manufacturers will continue their payments and using their submitted data on water heaters as of 2003. Table C-1 compares the payments under the existing rule, the proposed amendments, and Alternatives B and C.

Relative to the existing rule, based on a per unit, as opposed to a per emission basis, the mitigation fee payment under the proposed amendments will increase by \$1.2 million by the end of 2006. The four manufacturers would pay less under Alternative B and more under Alternative C than the proposed amendments. Extending the compliance dates under PAR 1121 provides additional time for the manufacturers to meet the final emission limit of 10 ng/J. Under PAR 1121, if a manufacturer directly complies with the final emission limitation requirement, it would not pay a mitigation fee. However, the cost to comply earlier would be higher than delayed compliance.

---

<sup>1</sup> In the last few years corporation consolidation has resulted in the formation of the four manufacturers that produce 99 percent of the residential gas-fired water heaters sold in the district.

**Table C-1 - Annual Mitigation Fee Payment**

Payment Period	Existing Rule (Mitigation fee until Jan. 2005)*	Proposed Amendments (Mitigation fee: Jan. 2006 for $\leq$ 50 gallons, Jan. 2007 for $>$ 50 gallons, and Jan. 2008 for direct vented and power vented)**	Alternative B (Mitigation fee: Jan. 2006 all water heaters)**	Alternative C (Mitigation fee: Jan. 2007 $\leq$ 50 gallons and Jan. 2008 for $>$ 50 gallons)**
Sept. to Dec. 2004	\$209,000	\$ 345,900	\$345,900	\$345,900
2005	0	1,037,800	1,037,800	1,037,800
2006	0	51,900	0	1,037,800
2007	0	20,800	0	51,900
Total <sup>†</sup>	\$209,000	\$1,456,400	\$1,383,800	\$2,473,500

<sup>†</sup>The total may not be equal to the sum of individual numbers due to rounding.

\*\$5,400/ton of NOx.

\*\*\$3/water heater.

The January 1, 2005 date for the final compliance limit of 10 ng/J in the existing rule is currently not feasible because of the limitation of technology. If the current mitigation fee program is extended for another year, the total fee payment will be \$836,000 in 2005. The amount of the mitigation fee payment under the proposed amendments beyond \$836,000 ( $\$1,037,800 - \$836,000 = \$201,800$ ) reflects a fee increase that is necessary because of the increase in current control costs of those projects financed by the mitigation fee program in order to achieve equivalent emission reductions. Although the research and development cost toward the compliance with the final limit is unknown due to confidentiality, the proposed amendments would delay the spending on research and development and implementation of technology, thereby providing compliance relief to the four water heater manufacturers. Such benefit is expected to compensate for the fee increase.

BOARD MEETING DATE: September 3, 2004

AGENDA NO. 30

**PROPOSAL:** Amend Rule 1121 - Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters

**SYNOPSIS:** Rule 1121 was amended in December 1999 to lower the emission limits for water heaters. Manufacturers submitted an interim report relative to their progress in meeting the final emission limit and staff provided a summary of this information and recommendations at the January 9, 2004 Board Meeting. In order for equipment manufacturers to address other national regulatory requirements and technical and manufacturing issues, staff is proposing to delay implementation of the final rule limit one to three years depending upon the size and type of the water heater and to modify the mitigation fee program. This item also serves as a notice of intent to make infeasibility findings, as required in the settlement agreement for the 1999 AQMP amendment.

**COMMITTEE:** Stationary Source, July 23, 2004, Reviewed

**RECOMMENDED ACTION:**

Adopt the attached resolution:

1. Certifying the Final Subsequent Environmental Assessment (SEA) for Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters;
2. Adopting the Statement of Findings and Statement of Overriding Considerations;
3. Making a finding of infeasibility regarding the January 1, 2005 compliance date for the Rule 1121 final rule limit; and
4. Amending Rule 1121 – Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters.

Barry R. Wallerstein, D. Env.  
Executive Officer

## **Background**

Rule 1121 – Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters, was amended in December 1999 to lower the nitrogen oxide (NO<sub>x</sub>) emission limits in the rule. The amendment reduced the NO<sub>x</sub> limit in two steps from 40 ng/J to 20 ng/J on July 1, 2002 and 10 ng/J on January 1, 2005. All four manufacturers used an option in the rule to pay a mitigation fee in lieu of meeting the July 1, 2002 interim limit.

The rule also required manufacturers to provide a report by July 1, 2003 on their progress toward meeting the final emission limit in the rule. Staff presented a summary of these reports at the January 2004 Governing Board meeting and the Governing Board directed staff to proceed with rule development. Since that time, staff has met with representatives of water heater manufacturers and the Gas Appliances Manufacturers Association (GAMA). Industry requested a delay in the compliance date for the final rule limit, a change in the mitigation fee program, and an exemption for some types of water heaters.

## **Affected Facilities**

Gas-fired storage water heaters are used by most residences and commercial enterprises in the South Coast Basin (Basin). There are over four million gas-fired water heaters in the Basin. There are four water heater manufacturers who provide 99% of all the different types of water heaters purchased in the Basin. The manufacturers of gas-fired storage water heaters are all located outside of the state.

## **Proposed Rule**

Staff is proposing to extend the compliance date for the final rule limit and continue the mitigation fee as a compliance option for the interim rule limit of 20 ng/J.

Manufacturers would have to meet the final emission limit in the rule by January 1, 2006, for conventional water heaters of 50 gallon capacity or less and by January 1, 2007, for conventional water heaters greater than 50 gallon capacity. Staff is proposing a three year delay, until January 1, 2008, for direct-vent, power-vent, and power direct-vent water heaters.

Staff proposes to set the mitigation fee at \$3.00 per unit to reflect current control costs. Staff also proposes to allow the Executive Officer to recover administrative costs of up to 5% for administering emission reduction projects and for the mitigation fee program.

The proposed rule language also includes minor changes to address the transition from the existing mitigation fee program to the new proposed fee program on date of adoption. The proposed rule also allows new units meeting the existing standard and manufactured before the compliance date for the new standard to be sold to customers for up to six months after the compliance date. Staff is not proposing any exemption from the final rule limit.

## **Public Process**

During the rulemaking process, staff conducted a Public Workshop and CEQA scoping session on June 17, 2004 to present the proposed rule. Staff has also met a number of times with manufacturers and GAMA to discuss technology development and industry's request for a delay of the final rule emission limit.

## **Key Issues**

Rule 1121 interim progress reports required manufacturers of water heaters to provide specific information, which included a description of technology, emission test results, identification of technical and production issues and an estimated manufacturing date. The information in the progress reports submitted by manufacturers was consistent. Manufacturers reported that progress had been made towards meeting the final rule limit; however more time is needed because a number of national safety, energy and environmental standards were delayed and must now be met concurrent with the Rule 1121 final limit.

Issues raised by the manufacturers and GAMA focus on the need to meet the District final rule limit and standards for flammable vapor ignition resistance (FVIR) and energy efficiency at the same time. Implementation of these other standards has been delayed from the original proposed dates and now must be met at about the same time as Rule 1121's final emission limit. The implementation dates for the Rule 1121 emission standards were set in part based on the expectation of earlier implementation dates for the FVIR and energy efficiency standards. The FVIR standard was phased-in starting in July 2003 with non-vented atmospheric units 50 gallons or less. Larger units and non-conventional units have later compliance dates. The new federal energy efficiency standard had to be met by January 2004.

Manufacturers need more time than anticipated to develop technologies that will both meet the final rule limit and the above-mentioned standards. A wide variety of burners have been evaluated. In addition, it is more difficult to meet the final rule emission limit with the addition of a lint, dust, and oil test to the FVIR standard. Radiant burners are more easily impacted by an accumulation of lint, dust or oil.

Manufacturers have indicated that they can meet the final limit for conventional water heaters with a one to two year delay. They have requested a one year delay for conventional units that are 50 gallons or less and a two year delay for conventional units greater than 50 gallons. The additional year delay for larger units is requested because these units have larger burners and they are still being redesigned to meet new safety and energy standards during the next year.

Manufacturers have also requested an exemption from both the final and interim emission limits for direct-vent and power-vented water heaters. Manufacturers have spent most of their developmental efforts on smaller conventional water heaters. This type is the most common type of gas-fired water heater sold for residential applications in Southern California. Other types of units include direct-vent units and those with

fans to ensure combustion exhaust is vented to the outside of a building. Direct-vent units draw air from outside the space where the water heater is installed, typically through a combination (coaxial) exhaust and ventilation duct to the outside of the building. Power vented units have longer exhaust ducts and draw air into the combustion chamber by use of an auxiliary exhaust fan. Water heater manufacturers have not provided information on testing of low NO<sub>x</sub> burners in direct-vent or power-vented units. Additional time is needed to evaluate low NO<sub>x</sub> burners in these types of water heaters.

When the District submitted Rule 1121 for the state implementation plan (SIP), no credit was taken for water heaters produced to meet the interim standard of 20 ng/J. Manufacturers have proposed to extend the mitigation fee program and change the fee structure to one based on the number of water heaters sold in the Basin. They proposed a fee of \$2.50 per water heater. Staff has proposed a mitigation fee of \$3.00 per water heater. The current fee is equivalent to about \$1.80 per water heater. The fee of \$3.00 per water heater is necessary to obtain sufficient and timely emission reductions to offset the reductions forgone by manufacturers choosing to pay the mitigation fee instead of meeting the interim limit.

At the time of the SIP submittal, it was not known which companies would produce water heaters meeting this standard and which would pay mitigation fees to offset emissions. All four manufacturers have elected not to produce water heaters that meet the interim standard and all are using the mitigation fee program to offset their emissions. Mitigation Fee projects funded by this program were approved by the Governing Board in June 2004. These projects will reduce NO<sub>x</sub> emissions by approximately 0.14 tons per day for at least 10-15 years of project life that, in total, will produce sufficient reductions to offset the emissions. However, in order to generate sufficient reductions in a timelier manner, i.e., within 2 years of project life, to offset the reductions that would have been achieved by water heaters meeting the interim standard, an increase in the mitigation fee is needed. Increasing the mitigation fee can provide additional and timelier emission reductions which cannot be quantified at this time.

A one year delay, until January 1, 2006, for the less than or equal to 50 gallon units, an additional year delay until January 1, 2007 for greater than 50 gallon units, and a three year delay for direct-vent, power-vent and power direct-vent units will result in less emission reductions than projected for the original rule until 2014. When emission reductions due to the new U.S. Department of Energy (DOE) efficiency requirement for water heaters and the mitigation projects are incorporated into the calculation, the delay of the final limit results in about 0.4 tons per day more of nitrogen oxide emissions in 2006 and more than 0.1 tons per day in 2010 compared with the original rule.

### **AQMP and Legal Mandates**

Rule 1121 is included in the Settlement Agreement for the 1999 AQMP amendment. A provision was included in the agreement for findings of infeasibility in the event technology forcing rules are not able to be met. An infeasibility finding can be made if the proposed control technology is not reasonably likely to be available by the implementation date. As described in the staff report, it is infeasible for manufacturers to meet the final rule limit by January 1, 2005. The Settlement Agreement allows extension of the implementation date by one year. Although the staff proposal includes a small portion of water heaters that would have their compliance date extended by up to three years, the reduction commitment of 7.6 tons per day could still be achieved by 2010 by the water heaters that will be in compliance by January 2006 when the state and federal energy efficiency standards are considered.

The 2003 AQMP attainment demonstration and State Implementation Plan (SIP) commitment will not be compromised because the 2003 AQMP included a three ton set aside to account for delays in implementation when technical assessments for rules indicate that technology did not develop as anticipated. A portion of those emissions will be used to offset reductions that would have occurred if the technology was available.

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

Pursuant to the California Environmental Quality Act (CEQA) and AQMD Rule 110, the AQMD has prepared environmental documentation evaluating potential significant adverse environmental impacts associated with implementing the proposed amendments to Rule 1121. A draft Subsequent Environmental Assessment (SEA) was prepared and released for a 45-day public review and comment period from June 4, 2004 to July 20, 2004. A Final SEA is included as a part of the attached package for the public hearing on the proposed rule.

### **Socioeconomic Analysis**

The socioeconomic analysis of the proposed amendments examined the amounts of mitigation fee payments up to the final compliance dates by assuming that the four manufacturers will continue their payments and using their submitted data on water heaters as of 2003. Relative to the existing rule, the mitigation fee payment under the proposed amendments will increase by \$1.2 million by the end of 2007. However, extending the compliance dates under PAR 1121 provides additional time for the manufacturers to meet the final emission limit of 10 ng/J. Under PAR 1121, if a manufacturer directly complies with the applicable interim or final emission limit, it would not pay a mitigation fee.

### **Conclusion and Staff Recommendation**

To mass produce water heaters at a lower NO<sub>x</sub> limit, there are several steps. New burners and water heater designs must meet DOE efficiency standards, pass lint, dust

and oil tests, as well as other safety measures. Changes to one component of the water heater often affect the design of other components. Once a satisfactory design is developed and tested, there are mandatory safety and reliability tests that must be done. Additional time is needed to change production lines in order to mass produce water heaters.

It is infeasible for the January 1, 2005 date to be met due to the amount of technical work still needed. The remaining time is not sufficient to develop, test and produce water heaters. Staff has worked with the manufacturers and is recommending a one-year delay for conventional water heaters 50 gallon capacity and less, two years for conventional water heaters greater than 50 gallon capacity, and three years for direct-vent, power-vent, and power direct-vent water heaters. Staff is not recommending a full exemption from the interim and final rule limits for direct-vent and power-vented water heaters because technology is available to meet these limits and the proposed amended rule provides additional time to develop and test technology for these types of water heaters. A final progress report from water heater manufacturers will be required to show progress made toward meeting the final rule limit from direct-vent, power-vent, and power direct-vent water heaters.

As described in the staff report, it is infeasible for manufacturers to meet the final rule limit by January 1, 2005. Staff recommends the Board make a finding of infeasibility regarding the January 1, 2005 compliance date for the final rule limit.

**Attachments**

- A. Summary of Proposal
- B. Key Issues and Responses
- C. Rule Development Process
- D. Key Contacts List
- E. Resolution
- F. Proposed Amended Rule
- G. Final Staff Report with Socioeconomic Impact Assessment
- H. Final Subsequent Environmental Assessment

**ATTACHMENT A**  
**SUMMARY OF PROPOSAL**

Proposed Amended Rule 1121 – Control of Nitrogen Oxides  
from Residential Type, Natural Gas-Fired Water Heaters

- Delay final emission limit of 10 ng/J by one year for conventional water heaters less than or equal to 50 gallons, two years for conventional water heaters greater than 50 gallons and three years for direct-vent, power-vent and power direct-vent water heaters;
- Extend the mitigation fee program for the interim rule limit for three years and change the fee to \$3.00 per water heater (currently about \$1.80 per water heater).
- Require manufacturers to provide a report on progress towards meeting the interim and final rule limits for direct-vent, power-vent and power direct-vent water heaters.

## ATTACHMENT B

### KEY ISSUES AND RESPONSES

#### Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters

**Issue:** The Rule 1121 final emission limit should be delayed to allow manufacturers additional time to develop the technology, test the new design and change the manufacturing process.

*Response: The proposed amended rule provides additional time to meet the final emission limit. Staff has worked with the manufacturers to allow sufficient time to modify conventional water heaters and provide additional development time for other types of water heaters.*

**Issue:** The Rule 1121 mitigation fee program should be changed to a fee based on the number of water heaters sold.

*Response: The mitigation fee has been changed to a proposed fee of \$3.00 per water heater.*

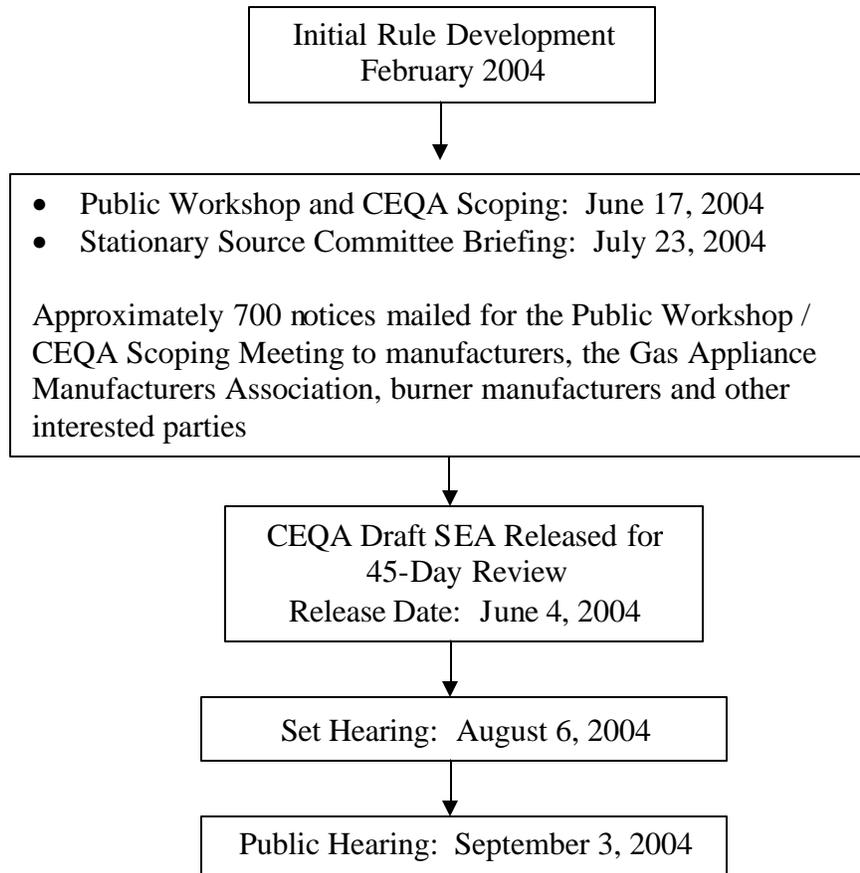
**Issue:** Rule 1121 should exempt direct-vent, power-vent and power direct-vent water heaters from both the final and interim emission limit. They are a small fraction (2%) of the water heaters sold in the District. The cost for modifying these types of water heaters would be high.

*Response: Industry has not provided test data in the interim progress reports to indicate that the interim and final emission limits cannot be met by those types of water heaters. Information from burner manufacturers suggests that the final limit can be met in these types of water heaters. While the percentage of these water heaters is small, there are approximately 80,000 of these types of water heaters in the District. In addition, if these water heaters are exempt from both limits, then they would account for approximately 8% of the total emissions from water heaters. Manufacturers have not provided any information on the cost of complying with the rule limits for this type of water heater.*

## ATTACHMENT C

### RULE DEVELOPMENT PROCESS

#### Proposed Amended Rule 1121 – Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters



**Seven (7) months spent in rule development.**

**ATTACHMENT D**  
**KEY CONTACTS LIST**

A.O. Smith Water Products Company  
American Water Heater Company  
Bradford White Corporation  
California Air Resources Board (CARB)  
Gas Appliance Manufacturers Association, Inc.  
Schott Glas  
Southern California Gas Company  
Rheem Manufacturing Company



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • www.aqmd.gov

May 16, 2008

Mr. Alex Krichevsky  
Air Pollution Specialist  
Stationary Source Division  
Air Resources Board  
1001 I Street  
Sacramento, CA 95812

Re: SIP Submittal: **Rule 1121 - Control of Nitrogen Oxides from Residential Type, Natural Gas-Fired Water Heaters**

Dear Mr. Krichevsky:

Attached you will find information pertaining to Rule 1121 which was amended by the South Coast Air Quality Management District (AQMD) Governing Board on September 3, 2004.

We are requesting that upon your review and concurrence the attached information be provided to EPA for its review and inclusion in the SIP.

If you have any questions on this submittal, please contact Joe Cassmassi at (909) 396-3155.

Sincerely,

Elaine Chang, DrPH  
Deputy Executive Officer  
Planning, Rule Development & Area Sources

JC:GQ:WB

Attachments:

- SIP Completeness Checklist
- Clean and strikeout copies of amended rule
- Proof of Publication
- Signed Board Resolution/Minutes
- APCD/AQMD Rule Evaluation Form
- Staff Report (includes public comments & responses)

cc: Andrew Steckel/EPA Region IX (w/o attachments)  
Mary Leonard/SCAQMD (w/o attachments)  
Rule 1121 (w/o attachments)  
SIP File (w/attachments)