

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

DRAFT STAFF REPORT

**Proposed Amendments to Rule 4905
(Natural Gas-fired, Fan-Type Central Furnaces)**

February 18, 2026

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SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

Draft Staff Report

February 18, 2026

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SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

Table of Contents

I. SUMMARY 4

II. BACKGROUND..... 5

 A. Source Category 5

 B. Current District Rule 4905..... 6

 C. South Coast AQMD Rule 1111 7

 D. Control Technology 8

 E. Reasons for Rule Development Process 9

III. PROPOSED AMENDMENTS TO RULE 4905 9

IV. ANALYSES 10

 A. Emission Reduction Analysis 10

 B. Cost-Effectiveness Analysis 10

 C. Socioeconomic Analysis 10

 D. Rule Consistency Analysis 11

 E. Environmental Impact Analysis 12

V. RULE DEVELOPMENT PROCESS 12

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

Draft Staff Report

February 18, 2026

I. SUMMARY

In 2015, the San Joaquin Valley Air Pollution Control District (District) amended District Rule 4905 (Natural Gas-Fired, Fan-Type Central Furnaces) to fulfill commitments in the *2008 PM_{2.5} Plan*, *2012 PM_{2.5} Plan*, and *2013 Plan for the Revoked 1-Hour Ozone Standard* to further reduce nitrogen oxide (NO_x) emissions from this source category. Amendments to the rule included lowering the NO_x emission limit from 40 nanograms of NO_x per joule of heat output (ng/J) to 14 ng/J. To address manufacturer concerns about the short time-frame to implement this technology-forcing limit, the 2015 amendments to Rule 4905 also allowed for the sale of non-compliant units during an initial implementation period in exchange for the payment of an emissions fee for each non-compliant unit sold, distributed, or installed in or into the San Joaquin Valley (Valley).

The lower NO_x limit required by this rule amendment were guided by a technology assessment funded by the District, the South Coast Air Quality Management District (SCAQMD), and others to evaluate the performance of ultra-low NO_x furnace technologies.¹ The technology assessment resulted in the successful demonstration of several low-NO_x furnace designs, which were expected to be commercially available by the compliance dates as established in the current Rule 4905, and through SCAQMD's amendment to their Rule 1111 (Reduction of NO_x Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces) in September 2014. For those manufacturers that were not able to respond to increased demand for new compliant units by the compliance dates, the emissions fee option allowed them to continue selling units in the Valley. Rule 4905 was amended several times between 2018 and 2024 to extend the emissions fee period for certain types of furnaces to allow additional time for manufacturers to commercialize compliant 14 ng/J units.

While manufacturers have successfully developed the necessary technologies to meet the 14 ng/J NO_x limit for condensing, non-condensing, and weatherized units, manufacturers have informed the District and SCAQMD that additional time is needed to develop compliant manufactured home furnaces. The emissions fee period for manufactured home furnaces ended September 30, 2025, and currently no manufacturers have developed a compliant 14 ng/J manufactured home furnace. Manufacturers have reported that they have not been successful in developing a technologically and economically feasible ultra-low NO_x unit for manufactured homes due to the challenges of meeting various additional regulations, the focus on zero-emission appliances statewide, and the small number of manufactured home furnaces sold.

For the reasons listed above, SCAQMD amended Rule 1111 on January 9, 2026, to extend the compliance fee option period to September 30, 2030, to allow additional time

¹ SCAQMD. *Governing Board Agenda Item, September 5, 2014: Amend Rule 1111 – Reduction of NO_x Emissions from Natural-gas-fired, Fan-type Central Furnaces.* (September 5, 2014). Retrieved from: <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2014/2014-sep5-032.pdf?sfvrsn=2>

for furnace manufacturers to develop manufactured home furnaces that comply with the 14 ng/J NO_x limit.²

At this time, the District is proposing to provide the additional time necessary for manufacturers to continue the technology development for manufactured home furnaces. The proposed amendments to District Rule 4905 requirements for manufactured home units are analogous to the changes in SCAQMD's Rule 1111, and provide for regulatory consistency in California.

II. BACKGROUND

A. Source Category

Rule 4905 is a point-of-sale rule that applies to any person who supplies, sells, offers for sale, installs, or solicits the installation of natural gas-fired, fan-type central furnaces with a rated heat input capacity of less than 175,000 British thermal units per hour (Btu/hr) and a rated cooling capacity of less than 65,000 Btu/hr for combination heating and cooling units. Affected parties include furnace manufacturers, residential heating wholesalers, supply stores, contractors and end-users. The point-of-sale approach has allowed the District to achieve NO_x reductions without placing an undue financial burden on residents, operators and businesses that sell these units in the Valley.

The most common residential and commercial heat sources are boilers and furnaces. Other heating options include heat pumps, active solar heating, electric heating, wood or pellet stoves, portable and direct vent wall heaters, and fireplaces.³ Heat distribution systems are either central heating, meaning heat is generated in a central location and distributed throughout the building, or point-of-use or space heating, meaning supplemental heat is provided to a specific room. Types of central heating systems include forced air, steam radiant, radiant, hot water baseboards, and electric baseboards. Types of space heaters include wood or pellet stoves, portable and direct vent wall heaters, and fireplaces. Fuel types include natural gas, propane, heating oil, electricity, and solid fuels such as wood or pellets.

All heating systems have three basic components: a heat source, a heat distribution system, and a control system. The control system is usually a programmable thermostat. The heat source, which generally determines the type of distribution system used, is selected based on many factors. The most important factor is geographical location, which determines the climate and types of available fuel. Most commercial

² SCAQMD. *Governing Board Agenda Item, January 9, 2026: Amend Rule 1111 – Reduction of NO_x Emissions from Natural-gas-fired, Fan-type Central Furnaces.* (January 9, 2026). Retrieved from:

https://www.aqmd.gov/docs/default-source/agendas/governing-board/2026/2026-jan9-020.pdf?sfvrsn=49c86a7e_4

³ Department of Energy. *Energy Saver 101: Everything You Need to Know About Home Heating.* (March 2, 2023). Retrieved from: <http://energy.gov/articles/energy-saver-101-infographic-home-heating>

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

Draft Staff Report

February 18, 2026

and residential buildings in the Valley have access to natural gas, which is typically the cheapest and most convenient fuel source in areas where it is available.

Rule 4905 applies to furnaces fueled by natural gas that use forced air distribution, the most common type of heating system for residential and commercial buildings. Central furnaces are controlled by a thermostat, which sends signals to turn the device on or off when the building temperature does not match a chosen set point. A valve then opens to send natural gas to the burners, which combust the gas directly into the heat exchangers. A blower circulates air through a filter, across the heat exchanger, and through a series of ducts and vents to different areas of the building. Exhaust from the combustion exits the building through a separate duct. Condensing units use an additional heat exchanger to extract the latent heat in the flue (exhaust) gas by cooling the combustion gasses to near ambient temperature and thereby increase the heating efficiency by up to 10%. The water vapor in the flue gas is condensed, collected, and drained.

Units installed in manufactured homes utilize the same types of materials and operating principles as commercial and residential units; however, significant differences exist. Furnaces installed in manufactured homes use sealed combustion, meaning all of the combustion air is taken from outside the building. These units also pre-heat the air, typically to 50-60°F, using a concentric vent where the combustion air is drawn in through the outer ring, while exhaust gases are vented through the inside core of the vent pipe. The combustion air is pre-heated because the cold outside air does not mix well with the fuel, while pre-heated air blends well and allows for quieter ignition and combustion.

B. Current District Rule 4905

Current District Rule 4905 limits NO_x emissions from natural gas-fired, fan-type central furnaces with rated heat inputs less than 175,000 Btu/hr and for combination heating and cooling units rated at a cooling capacity less than 65,000 Btu/hr. Unit types include condensing furnaces, non-condensing furnaces, weatherized furnaces, and furnaces installed in manufactured homes.

The rule requires units to comply with a 14 ng/J NO_x emission limit, and requires units be certified through the District's certification program, the SCAQMD certification process for SCAQMD Rule 1111, or another emission certification program approved by the United States Environmental Protection Agency (EPA) and the District's Air Pollution Control Officer (APCO). Manufacturers are also required to display the model number of the unit on the shipping carton and rating plate. If requested by the APCO, each manufacturer must submit a statement confirming the unit is in compliance, including a source test report verifying compliance with the emission limit.

To allow technology to develop, the rule allowed the sale of non-compliant units in exchange for the payment of an emissions fee for each non-compliant unit sold. This

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

Draft Staff Report

February 18, 2026

allowance has been necessary to ensure adequate supply for the expected demand for new units in the San Joaquin Valley. The emissions fee was set at a level to provide a financial disincentive for continued sale of non-compliant units, requiring a fee for each condensing, non-condensing, weatherized, and manufactured home units. These initial emissions fees have been increased over time through various amendments to District Rule 4905. The emissions fee compliance option has expired for all units.

C. South Coast Air Quality Management District (SCAQMD) Rule 1111

SCAQMD amended Rule 1111 (Reduction of NOx Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces) in November 2009 to lower the NOx emission limit for applicable units from 40 ng/J to 14 ng/J.⁴

Due to the lack of commercially available equipment that was compliant with the new lower NOx limit, the District, SCAQMD, and others funded a technology assessment in 2009 to evaluate the performance of ultra-low NOx furnaces. The technology assessment resulted in the successful demonstration of several low-NOx furnace designs, which were expected to be commercially available by the compliance dates.

SCAQMD amended Rule 1111 again in September 2014, to extend the compliance date and add an emissions fee option due to lack of commercially available compliant units.⁵ The alternate compliance option allowed manufacturers to pay a per unit fee in lieu of meeting the 14 ng/J NOx limit.

At the request of furnace manufacturers, on March 2, 2018, SCAQMD amended Rule 1111 to extend the fee period by up to 1.5 years and increase the alternative compliance emissions fee amounts. In December 2019, SCAQMD amended Rule 1111 to provide a limited exemption from the 14 ng/J emission limit for condensing and non-condensing furnace installations at elevations greater than or equal to 4,200 feet above sea level until October 1, 2020.⁶ In September 2020, SCAQMD amended Rule 1111 once again to extend the mitigation fee option for weatherized units for one year and extend an exemption for high-altitude furnaces.⁷

On October 1, 2021, SCAQMD amended Rule 1111 to extend the mitigation fee option end date for mobile home furnaces another two years, extend the high-altitude

⁴ SCAQMD. *Governing Board Agenda Item, November 6, 2009: Amend Rule 1111 – Reduction of NOx Emissions from Natural-gas-fired, Fan-type Central Furnaces.* (November 6, 2009). Retrieved from: <http://www3.aqmd.gov/hb/2009/November/091130a.htm>

⁵ SCAQMD. *Governing Board Agenda Item, September 5, 2014: Amend Rule 1111 – Reduction of NOx Emissions from Natural-gas-fired, Fan-type Central Furnaces.* (September 5, 2014). Retrieved from: <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2014/2014-sep5-032.pdf?sfvrsn=2>.

⁶ SCAQMD. *Governing Board Agenda Item, December 6, 2019: Amend Rule 1111 – Reduction of NOx Emissions from Natural-gas-fired, Fan-type Central Furnaces.* (December 6, 2019). Retrieved from: <https://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2019/2019-dec6-026.pdf?sfvrsn=6>

⁷ SCAQMD. *Governing Board Agenda Item, September 4, 2020: Amend Rule 1111 – Reduction of NOx Emissions from Natural-gas-fired, Fan-type Central Furnaces.* (September 4, 2020). Retrieved from: <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2020/2020-Sept4-031.pdf?sfvrsn=6>

exemption end date, and provided an exemption for downflow and large-sized condensing or non-condensing furnaces being replaced in the high-altitude areas.⁸ SCAQMD amended Rule 1111 again on September 1, 2023, to extend the mitigation fee option end date for mobile home furnaces, from September 30, 2023, to September 30, 2025.⁹

On January 9, 2026, SCAQMD amended Rule 1111 to extend the mitigation fee option end date for mobile home furnaces another five years, from September 30, 2025 to September 30, 2030, to allow manufacturers additional time for the development of compliant furnaces for mobile homes and other technology¹⁰.

D. Control Technology

Furnace manufacturers have been successful in developing compliant condensing and non-condensing natural gas-fired furnaces, as well as compliant weatherized furnaces, by the respective emissions fee option end dates established in Rule 4905 of 2019 and 2021, except for manufactured home furnace units.

However, manufacturers have not been successful at developing a commercially viable compliant manufactured home furnace technology to meet the 14 ng/J NOx limit. The size and design of manufactured home furnaces is significantly different from that of furnaces available for other structures. New manufactured home gas furnaces must also meet requirements set by the U.S. Department of Housing and Urban Development for propane compatibility, however, current ultra-low NOx furnace technology used in other furnaces are not compatible with liquid propane. Manufactured home furnaces must also meet U.S. Department of Energy's energy efficiency standards.

In addition to the challenges referenced above, manufacturers are preparing for impending statewide zero-emission requirements. Various local and state agencies in California have adopted, proposed, or are currently developing zero-emission policies for building appliances, including furnaces. In response to these actions, manufacturers are dedicating resources toward the development of zero-emission equipment.

Heat pumps for manufactured homes are available, but have very low market adoption due to the configuration and infrastructure of existing manufactured homes and the operational requirements for these units. Manufacturers have reported that due to the challenges of meeting various additional regulations, the focus on zero-emission

⁸ SCAQMD. *Governing Board Agenda Item, October 1, 2021: Amend Rule 1111 – Reduction of NOx Emissions from Natural-gas-fired, Fan-type Central Furnaces.* (October 1, 2021). Retrieved from: <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2021/2021-Oct1-023.pdf?sfvrsn=6>

⁹ SCAQMD. *Governing Board Agenda Item, September 1, 2023: Amend Rule 1111 – Reduction of NOx Emissions from Natural-gas-fired, Fan-type Central Furnaces.* (September 1, 2023). Retrieved from: <https://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2023/2023-sep1-035.pdf?sfvrsn=2>

¹⁰ SCAQMD. *Governing Board Agenda Item, January 9, 2026: Amend Rule 1111 – Reduction of NOx Emissions from Natural-gas-fired, Fan-type Central Furnaces.* (January 9, 2026). Retrieved from: https://www.aqmd.gov/docs/default-source/agendas/governing-board/2026/2026-jan9-020.pdf?sfvrsn=49c86a7e_4

appliances statewide, and the small number of manufactured home furnaces sold, they have not been successful in developing a technologically and economically viable ultra-low NOx unit for manufactured homes.

E. Reasons for Rule Development Process

The emissions fee option period for manufactured home furnaces ended on September 30, 2025, with a six-month sell-through period set to expire on March 31, 2026. The District is proposing to extend the compliance fee provision, consistent with the extension being provided in the SCAQMD. This amendment also provides for regulatory consistency in California and allows manufacturers to dedicate more focused resources toward developing technologically viable and affordable zero-emission heating equipment, ultimately leading to emission reductions beyond what can be achieved by ultra-low NOx requirements.

III. PROPOSED AMENDMENTS TO RULE 4905

District staff are recommending that the purpose, applicability, definitions, exemptions, and the majority of the requirements in Rule 4905 be maintained. The proposed change to the rule would extend the emissions fee compliance option for manufactured home units from September 30, 2025, to September 30, 2030, as further discussed below. Additionally, in an effort to simplify rule language and clarify existing requirements, expired language will be removed from several sections of the rule. The following paragraphs detail the proposed modifications to existing rule language and requirements.

Requirements (Section 5.0)

Section 5.2 – Emissions Fee Option

Manufacturers have yet to develop, certify, and mass-produce compliant units to meet Valley consumer demands for manufactured home furnaces. In response to the lack of compliant units available, the District is proposing to amend Rule 4905 to extend the emissions fee option period for manufactured home units through September 30, 2030, with no changes in the fee structure. This extension will allow the additional time necessary to continue technology development, while providing strong incentive for accelerated deployment of compliant units. The current fee structure, amount, and timeline was previously established based on several discussions with multiple stakeholders, including manufacturers, distributors, and contractors to ensure sufficient time necessary to continue technology development and the certification process while providing strong incentive for accelerated deployment of compliant units.

In an effort to simplify rule language, the District is also proposing to remove obsolete language and to renumber applicable subsequent sections. Because the emission fee

option, as proposed, is only available to manufactured homes units and all other furnace units are required to meet the 14 ng/J NOx emission limit specified in Table 1, the District is proposing to remove Table 2 in its entirety, and incorporate the remaining applicable language pertaining to manufactured home units into the first paragraph of section 5.2.

IV. ANALYSES

A. Emission Reduction Analysis

The 2015 amendments to Rule 4905 lowered the NOx emission limit for residential units and added a NOx emission limit for units installed in commercial buildings (commercial units) and units installed in manufactured homes. Because Rule 4905 is a point-of-sale rule, the emissions reduced from the 2015 amendments of 2.10 tons per day (tpd) are achieved gradually as older units are replaced over the 20-year turnover period. Annual NOx emission reductions were determined to be 0.105 tpd.

Reductions will still be achieved from units installed in manufactured homes by 2030. Therefore, there will be no changes to the emissions reductions.

B. Cost-Effectiveness Analysis

A cost-effectiveness analysis is not required as the proposed amendments do not impose additional requirements on manufacturers, distributors, wholesalers, retailers, and dealers of furnaces. California Health & Safety Code (CH&SC) 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 that would achieve the emission reduction objective of the proposed amendments, relative to ozone, carbon monoxide, sulfur oxides, NOx, and their precursors. The proposed amendment does not include new BARCT requirements; therefore, this provision is not required for this rule amendment project.

C. Socioeconomic Analysis

Pursuant to CH&SC §40728.5, the District conducts a socioeconomic analysis of a proposed rule or rule amendment that will significantly affect air quality or emission limitations prior to rule adoption. A socioeconomic analysis examines how a rule project may impact industries, businesses, employment rates, and the economy in the Valley. Proposed amendments would extend the emission fee option for manufactured homes an additional five years, with no significant impact on air quality, emissions limits, or costs. In addition, the higher initial capital cost of compliant units are offset by the energy cost savings these newer and more efficient units will provide throughout the life

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

Draft Staff Report

February 18, 2026

of the unit. Due to these reasons, a socioeconomic analysis is not required for this rule amendment project.

D. Rule Consistency Analysis

Pursuant to CH&SC §40727.2, prior to adopting, amending, or repealing a rule or regulation, the District is required to perform a written analysis that identifies and compares the air pollution control elements of the rule or regulation with corresponding elements of existing or proposed District and EPA rules, regulations, and guidelines that apply to the same source category. The elements analyzed are emission standards, monitoring and testing requirements, and recordkeeping and reporting requirements.

Based on the following analysis, District staff found that the proposed amendments to Rule 4905 would not conflict with any District or federal rules, regulations, or policies covering similar stationary sources.

District Rules

There is no other District prohibitory rule or regulation tailored specifically for natural gas-fired, fan-type central furnaces.

State Rules, Regulations and Policies

There are no identified California state rules, regulations, or policies specific to reducing emissions from, fan-type central furnaces.

Federal Rules, Regulations, and Policies

There are no applicable Control Technique Guidelines (CTG), Alternative Control Techniques (ACT), New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP), Best Available Control Technology (BACT), or Maximum Achievable Control Technology (MACT) guidelines for natural gas-fired, fan-type central furnaces with a rated heat input capacity less than 175,000 Btu/hr or, for combination heating and cooling units, a rated cooling capacity less than 65,000 Btu/hr.

EPA Policy on Recordkeeping: EPA has a policy that mandates stationary sources keep and maintain records for at least five years; however, as a point-of-sale rule, natural gas-fired, fan-type commercial and residential central furnaces of this size are not permitted sources and are thus not required to follow specific recordkeeping guidelines. Therefore, units subject to Rule 4905 are not subject to EPA's Policy on Recordkeeping.

E. California Environmental Impact Analysis (CEQA)

The rule amendment is to extend the emission fee compliance option for five years, from September 30, 2025 to September 30, 2030. According to Section 15061 (b)(3) of the CEQA Guidelines, a project is exempt from CEQA if, “(t)he activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.” As such, substantial evidence supports the District’s assessment that the rule amendment will not have any significant adverse effects on the environment.

Furthermore, the rule amendment is an action taken by a regulatory agency, the San Joaquin Valley Air Pollution Control District, as authorized by state law to assure the maintenance, restoration, enhancement, or protection of air quality in the San Joaquin Valley where the regulatory process involves procedures for protection of air quality. CEQA Guidelines §15308 (Actions by Regulatory Agencies for Protection of the Environment), provides a categorical exemption for “actions taken by regulatory agencies, as authorized by state or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment where the regulatory process involves procedures for protection of the environment. Construction activities and relaxation of standards allowing environmental degradation are not included in this exemption.” No construction activities or relaxation of standards are included in this rule amendment.

Therefore, for all the above reasons, the rule amendment is exempt from CEQA. Pursuant to Section 15062 of the CEQA Guidelines, District staff will file a Notice of Exemption upon Governing Board approval of Rule Amendment.

V. RULE DEVELOPMENT PROCESS

The District conducted a public process for developing proposed Rule 4905. Information about public meetings was shared with members of the public, affected sources and other interested stakeholders. As part of the rule development process, the District conducted a public workshop on January 21, 2026, to present, discuss, and receive comments on the proposed rulemaking.

The District published the draft rule for public review prior to the workshop to provide opportunity for public comment on the draft proposed rule. Workshop announcements, workshop materials, and public notices were provided in both English and Spanish, and the District provided simultaneous Spanish interpretation during the public workshop.

Throughout the rule development process, District staff solicited feedback and comments from the public. No comments were received from the public, affected

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

Draft Staff Report

February 18, 2026

sources, or interested parties during the public outreach and workshop process, or the comment period following the workshop.

The proposed rule was published for 30-day public review and comment on February 18, 2026, prior to the public hearing to consider the adoption of the rule by the District Governing Board.

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

Draft Staff Report

February 18, 2026

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