CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE Fuel Specifications and Labeling of Natural Gas CCR Title 4, New Sections 4192.1 and 4192.2, and Sections 4206 and 4207 April 26, 2024

INITIAL STATEMENT OF REASONS

AUTHORITY AND OVERSIGHT

The Legislature has charged the Department of Food and Agriculture (Department) with the responsibility of supervising weights and measures activities within California pursuant to California Business and Professions Code (BPC) Division 5, Section 12100. The Secretary of the Department is granted the authority to adopt such regulations as are reasonably necessary to carry out the provisions of Division 5 of the BPC. Both state and county weights and measures officials oversee and enforce the requirements in BPC Division 5 and requirements adopted by the Department in Division 9 of the California Code of Regulations (CCR).

State and County Weights and Measures Programs

The Department works closely with county sealers of weights and measures, who carry out most weights and measures enforcement activities at the local level. The 55 sealers serving California's 58 counties are mandated to periodically inspect and test all weighing and measuring devices used for commercial purposes within their jurisdiction in accordance with BPC Section 12210. County sealers ensure the accuracy of commercial weighing and measuring devices, e.g., supermarket scales, natural gas fuel dispensers, vehicle scales, taximeters, etc., because most goods and services are offered for sale or sold by weight or measure. During inspections, they also check for compliance with all labeling and marking requirements of the device.

The Department's role in this state/county system is to provide supervision and enforcement of the activities of county sealers by offering technical training, oversight, and support to facilitate uniform statewide application of the law.

PROBLEM STATEMENT

Currently, the Department has not adopted nor enforces automotive spark-ignition engine fuel specifications for natural gas. On May 4, 2021, ASTM International published ASTM D8080 Standard Specification for Compressed Natural Gas (CNG) and Liquefied Natural Gas (LNG) Used as a Motor Vehicle Fuel. Additionally, on July 17, 2023, ASTM International published ASTM D8487 Standard Specification for Natural Gas, Hydrogen Blends for Use as a Motor Vehicle Fuel. In accordance with BPC Section 13440 (a), the Department shall adopt by reference, the latest standards established by nationally recognized consensus organizations, i.e., ASTM International or SAE International. To comply with statute, the Department proposes to adopt *ASTM D8080* and *ASTM D8487* as the motor vehicle fuel specifications for natural gas.

Despite not yet adopting and enforcing fuel specifications for natural gas, the Department promulgated regulations in 2018 that adopted interim labeling requirements for CNG and LNG dispensers. The Department determined that these interim labeling requirements are, in part, not compatible with the ASTM International fuel specifications. The Department proposes to harmonize and make consistent the labeling requirements of natural gas fuel dispensers with the proposed fuel specifications.

BACKGROUND

ASTM International

ASTM International is an international standards organization that collaboratively develops and maintains consensus standards utilized around the world. Through open invitation and transparent processes, ASTM International encourages all interested stakeholders to join in the collaborative development of standards, of which include fuel quality standard specifications. Published ASTM International standards represent consensus among many technical experts including manufacturers, suppliers, consumers, government agencies, and academics. Many government agencies at both federal and state levels adopt by reference ASTM International standards.

Overview of Natural Gas Motor Vehicle Fuel

Natural gas is a combustible mixture consisting mainly of simple hydrocarbon gases. The primary component of natural gas is methane. Additionally, natural gas can contain minor components (such as hydrogen) that may cause a deleterious effect on the combustion performance, particularly when used as a spark-ignition motor vehicle fuel. This effect on combustion performance can lead to reduced performance and vehicle mileage, engine damage, and increased tailpipe emissions.

Natural gas motor vehicle fuel is currently sold at retail in two forms: Compressed Natural Gas (CNG) and Liquified Natural Gas (LNG). CNG is natural gas that is stored and used in a compressed gaseous phase. LNG is natural gas that is stored and used in a cryogenically liquified phase.

Renewable Natural Gas

Renewable Natural Gas (RNG) is natural gas produced from renewable resources such as agricultural waste and other biomass-based sources. RNG production captures the

biomass-based methane emissions (a potent greenhouse gas) into natural gas that can be used as heating and appliance fuel and can be further refined to meet natural gas motor vehicle fuel specifications. Using RNG in an internal combustion engine as a motor vehicle fuel converts the biomass-based methane to carbon dioxide, a relatively less potent greenhouse gas.

Methane Number

Methane Number (MN) is a parameter that characterizes the combustion performance of natural gas as motor vehicle fuel. MN is an analytical estimate of a gaseous fuel's resistance to engine knock and indexed to volumetric blends of methane and hydrogen, where methane has an MN equal to 100 and hydrogen an MN equal to 0. Although it is possible to directly measure MN of a natural gas fuel using expensive test engines, a more practical approach is to use the volumetric concentrations of each component of the fuel to analytically estimate MN with an MN rating index calculation model.

One of the original MN calculation models is the MWM Method, developed by engine manufacturer Motoren Werke Mannheim (MWM), and is the method used in the European standard for natural gas fuel, *CEN EN 16726 standard "Gas infrastructure - Quality of gas - Group H,*" (published December 2015). In 2018, absent of any other nationally recognized enforceable fuel quality specifications, the Department adopted the MWM Method by reference as part of the interim labeling requirements for CNG and LNG dispensers. In the same year, ASTM International published *ASTM D8221 Standard Practice for Determining the Calculated Methane Number (MNc) of Gaseous Fuels Used in Internal Combustion Engines. ASTM D8221* is based on the MWM Method and is an optimized algorithm that calculates MN based upon gas composition. In *ASTM D8080* and *D8487*, MNc is calculated using *ASTM D8221* and designates fuel grades for both CNG and LNG motor vehicle fuels. The scope of *ASTM D8080* includes both CNG and LNG products, whereas the scope of *ASTM D8487* only includes CNG products.

Natural Gas, Hydrogen Blends

Recently, natural gas utilities have considered injecting hydrogen gas into natural gas pipelines for distribution and decarbonization purposes. These efforts have the potential to cause negative effects to natural gas motor vehicles because hydrogen gas decreases the MN of natural gas fuel. However, natural gas engines can tolerate certain levels of hydrogen gas without experiencing the deleterious effects previously discussed. *ASTM D8487* was developed to provide fuel specifications for natural gas motor vehicle fuels, containing higher concentrations of hydrogen gas, that still meet the fuel grades outlined in *ASTM D8080*. Natural gas fuels that meet *ASTM D8487* will perform comparably to fuels that meet *ASTM D8080*.

LEGISLATIVE AND EXECUTIVE HISTORY

Assembly Bill (AB) 808 (Ridley-Thomas, Statutes of 2015, Chapter 591) added BPC Section 13400 (b) to define "Alternative fuel" to include natural gas motor vehicle fuels in both compressed gas and cryogenic liquid forms.

BPC Section 13440 (a) requires the Department to establish specifications for automotive spark-ignition engine fuels and to adopt by reference the latest standards established by a recognized consensus organization. Section 13440 (a) also stipulates that no specification can be less stringent than one required by any California state law. AB 808, as referenced above, added BPC Section 13440 (i), which specifies that natural gas "motor vehicle fuel shall meet the latest specification set forth by ASTM International or SAE International."

BPC Section 13480 (a) requires that any person selling any motor vehicle fuel at retail must display a plainly visible statement on the fuel dispenser(s) that includes, both the product name and grade designation. BPC Section 13480 (c) requires the Department to adopt regulations as are reasonably necessary to define and enforce antiknock index labeling requirements. BPC Section 13480 (e) requires that all statements required in Section 13480 for retail motor vehicle fuel dispensers shall be in letters and numerals not less than one-half inch in height. BPC Section 13484 requires that the displayed statements described in BPC Section 13480 must be placed on each customer-facing side of a dispenser.

REGULATORY HISTORY

In 1993, the California Air Resources Board (CARB) adopted a CNG fuel quality specification, for the purposes of research to determine greenhouse gas forming tailpipe emissions. The Department does not have the authority to enforce the CARB's fuel quality specifications. However, the Department has authority to enforce fuel specifications in BPC Division 5 and CCR Title 4, except that no specification shall be less stringent than required by any California state law. Recently, CARB has posted on its <u>Alternative Fuels: Compressed Natural Gas (CNG)</u> webpage that it was involved in the ASTM International working group to develop a fuel quality specification for natural gas. CARB began a review to possibly update its specification; however, it has since temporarily put this review on hold pending the adoption of ASTM International's standard specification for natural gas used as motor vehicle fuel. Now that ASTM International has adopted both ASTM D8080 and D8487, CARB may continue its review to decide whether its specification needs to be amended.

The Department adopted the Federal Trade Commission (FTC) retail sale labeling requirements and other interim CNG and LNG fuel dispenser labeling requirements that became effective April 1, 2018, in CCR Title 4, Division 9, Sections 4206 and 4207.

PURPOSE AND NECESSITY OF THE PROPOSED REGULATION

The purpose and necessity of this proposed regulation is to adopt the latest editions of *ASTM D8080* and *D8487* fuel quality specifications for natural gas motor vehicle fuel sold at retail to the public and modify the current labeling requirements for CNG and LNG dispensers.

Chapter 6. Automotive Products Specifications

Article 10. Specifications - Natural Gas

The Department proposes to add Article 10 to Chapter 6 of the CCR to differentiate this fuel specification from other fuel specifications found in Chapter 6. It is necessary to organize fuel specifications in this way for added clarity and ease of reference.

Section 4192.1. Definitions.

The Department proposes to add Section 4192.1 to the CCR to provide definitions of natural gas fuel varieties sold as a motor vehicle fuel. These definitions clarify the difference between these product varieties. It is necessary to provide these definitions so that persons selling natural gas motor vehicle fuel at retail know the difference between natural gas product types and thus which labeling requirements apply to their dispensers. Furthermore, the definitions establish that these varieties are all classified as natural gas fuels as defined in the BPC and CCR.

Section 4192.2. Specifications — Natural Gas.

The Department proposes to add Section 4192.2 to the CCR to adopt and incorporate by reference the latest specifications set forth in ASTM International standard specification *ASTM D8080* for CNG and LNG motor vehicle fuels and *ASTM D8487* for CNG hydrogen blends because neither fuel quality specification wholly encompasses all varieties of natural gas fuels. For example, the scope of *ASTM D8080* does not include hydrogen enriched natural gas; and the scope of *ASTM D8487* does not include LNG. Yet, RNG is within the scope of both *ASTM D8080* and *D8487*. Therefore, it is necessary for the Department to adopt both specifications because not doing so would unnecessarily restrict the retail sale of certain natural gas fuel varieties that are suitable for current and future natural gas motor vehicles.

The Department proposes an exception to the total sulfur content specification in *ASTM D8080*, and instead require that natural gas sold as motor vehicle fuel not exceed 16 parts per million by volume (ppmv). It is necessary to adopt this exception to make it consistent and harmonize it with CARB's existing sulfur requirement. Furthermore, it is necessary to limit this exception to only *ASTM D8080* because *ASTM D8487* has a 5 ppmv total sulfur limit; and adopting a general limit of 16 ppmv might be misunderstood as a total sulfur allowance up to 16 ppmv for *ASTM D8487*.

Chapter 7. Advertising and Labeling of Gasoline and Other Motor Vehicle Fuels

Section 4206. Dispenser Labeling Requirements for Compressed Natural Gas and Liquefied Natural Gas.

The Department proposes to repeal current language within Section 4206 and replace it with four new subdivisions combining the label requirements into one section. These label requirements include: FTC fuel rating label; product name; fuel grade designation; and gasoline gallon equivalent or diesel gallon equivalent conversion factor statement. The Department proposes that the statement requirements in all four subdivisions must be conspicuous, legible, and indelibly marked so that they are clearly readable by a customer. This is necessary because it facilitates the communication of critical information for a customer to make a value-based comparison of natural gas motor vehicle fuel.

The Department proposes to repeal definitions in subdivision (a) because these terms will no longer be used in this section and will no longer be applicable to the new language proposed by the Department. The interim MWM MN calculation and labeling requirements, adopted by the Department in 2018, is a European standard and is not the same as and does not harmonize with ASTM International's standard specifications for natural gas as motor vehicle fuel. The reference MN calculation method (*ASTM D8221*) in *ASTM D8080* and *D8487*, is vetted and approved by ASTM International committee members and is now the consensus calculation. Therefore, it is necessary to repeal definitions regarding the interim MWM labeling requirements.

The Department proposes to repeal the current requirements in subdivision (b) because they are duplicative of BPC Sections 13480 and 13532. However, for added clarity, the Department proposes to maintain product name and fuel grade designation labeling requirements into distinct subdivisions because they are separate and independent labels. In doing so, the Department proposes to keep the product name requirement in a newly proposed subdivision (b) and relocate the fuel grade labeling requirement to a newly proposed subdivision (c). Separate subdivisions avoid ambiguity and facilitate ease of reference for both the business owner and regulator. Currently, regulation does not specify whether the product name is to be displayed on a label as spelled out in complete words or as an acronym. The Department proposes to allow the product name to be either spelled out or displayed as an acronym at the business owner's discretion. The acronyms "CNG" and "LNG" are commonly used and readily understood terms in the industry and the labels would cost less to manufacture.

The Department proposes to repeal the language in the current subdivision (c) because these interim labeling requirements are no longer necessary with the proposed adoption of *ASTM D8080* and *D8487*. For reasons stated above, the Department proposes new language in subdivision (c) to require that the fuel grade label contain the MNc designation. It is necessary to display the minimum MNc to provide customers a benchmark for value-based comparison of natural gas motor vehicle fuels.

The Department proposes to consolidate the equivalent conversion factor statement requirements by repealing language in the current subdivisions (d) and (e) and consolidating these requirements into a newly proposed subdivision (d). The Department also proposes to add Arial Bold along with Helvetica Black as a permissible font type. Arial Bold is a commonly used and readily available font type that includes acceptable letter thickness (font line width) to be easily read by most. The Department also proposes to reduce the minimum font size requirement from three-quarter inch to one-quarter inch cap height. Specific label height requirements for motor vehicle fuels are set in BPC Sections 13470, 13473, and 13480. The Department determined that the equivalent conversion factor statements in the current subdivisions (d) and (e) of this section are informational only and are not part of the labeling requirements established in statute. Furthermore, the Department received requests from several natural gas producers and retailers to review the height requirement of these statements as they feel that they take up an unreasonable amount of space on a fuel dispenser. The Department printed the label in Helvetica Black at three-quarter inch cap height and found that the equivalent conversion factor statement is almost 32 inches long. After consideration, the Department agreed that a 32-inch long label was unnecessarily large. Conversely, a one-quarter inch cap height would create a 14-inch long label. The oneguarter inch minimum cap height requirement strikes a balance between readability and label size constraints on a natural gas fuel dispenser.

Section 4207. Additional Dispenser Labeling Requirements for Liquefied Natural Gas and Compressed Natural Gas.

Historically, the Department adopted FTC labeling requirements (Sections 4202 through 4204) of Chapter 7 in the same section as other labeling requirements for each fuel type. However, for natural gas, the Department adopted FTC labeling requirements in

this section separately from the other labeling requirements adopted in Section 4206. The Department proposes to repeal Section 4207 and relocate the FTC labeling requirements for natural gas to Section 4206 subdivision (a). Consolidating the labeling requirements into one section provides clarity and ease of reference for retailers and weights and measures officials.

BENEFITS OF THE REGULATION

Adoption and enforcement of *ASTM D8080* and *D8487* by the Department will immediately benefit owners of CNG and LNG vehicles, because fuel sold at retail that meets either of these specifications will assure these vehicle owners that it will not impair their vehicle's engine performance and durability. Fuel grade labeling requirements will give customers a benchmark of comparison when choosing a natural gas fuel that meets their specific engine performance requirements. Updating and clarifying fuel grade and unit price labeling requirements further helps customers make informed value-based decisions.

Adopting both fuel specifications will permit the sale of a larger variety of natural gas fuels and allow for higher levels of hydrogen in retail available natural gas fuel. This may benefit natural gas producers because blending in hydrogen produced from renewable resources could improve natural gas marketability in a future energy market focused on decarbonization.

ECONOMIC IMPACT ASSESSMENT/ANALYSIS

According to the United States Department of Energy Alternative Fuels Data Center, there are 158 CNG and LNG fueling stations in California as of October 31, 2023. Of these 158 stations, publicly available stations owned and operated by state and local governments were excluded. The Department does not have regulatory authority over these entities pursuant to Attorney General (AG) Opinion No. SO 77-13, and further supported by Division of Measurement Standards (DMS) Notice D - 20 - 06. Considering the above criteria, the Department determined that 106 natural gas stations are regulated by the Department and that 27 businesses own these stations.

Common CNG and LNG dispensers have one fuel meter per customer-facing side. The Department prepared this economic impact using the number of registered fuel meters to determine the number of customer-facing dispenser sides affected by the proposed labeling requirements. Per 2021/22 Fiscal Year Expenditure Report (DMS Notice G - 23 - 02), there were 526 registered CNG and LNG fuel meters reported to the Department from all county weights and measures offices throughout California. There are approximately five (526 fuel meters \div 106 stations) customer-facing dispenser sides per station.

After consulting with the label printing company Avery, the Department concluded that the printing cost per label is approximately \$5.00. This proposed rulemaking will require four labels per customer-facing dispenser side.

The Department anticipates businesses will not incur any additional expenses due to adoption of natural gas motor vehicle fuel quality specifications. The proposed regulation accommodates the sale of natural gas motor vehicle fuel with a lower calculated MN. A lower fuel grade (MN_c 65) is permissible if businesses cannot meet the higher fuel grade (MN_c 75). Businesses may choose to install equipment that enriches fuel to meet the MN_c 75 fuel grade specification; however they are not required to do so by this rulemaking action. Therefore, the cost of enriching fuel is not considered in this economic impact assessment.

Small Businesses

None of the businesses that own and operate natural gas fueling stations meet the definition of a small business in California Government Code Title 2, Chapter 3.5, Section 11346.3 (b)(4)(B).

Large Businesses

Of the 27 large businesses, three own over 60 percent of the 106 fueling stations. These three businesses own between 14 and 37 fueling stations each; however, the remaining 24 typical large businesses own one to three fueling stations. The Department is basing this economic impact assessment on a typical large business that owns two fueling stations with five customer-facing dispenser sides.

All 27 large businesses would incur nominal costs to print required dispenser labels. A typical large business would incur approximately \$200.00 (4 labels \times \$5.00 per label \times 5 customer-facing dispenser sides \times 2 fueling stations) in the first fiscal year. The Department has determined that there may be an indirect cost of maintaining and periodically replacing any label as needed. The Department estimates an average indirect cost of \$5.00 per year after the first fiscal year and ongoing as needed to replace or maintain dispenser labels. The Department does not anticipate any additional costs in the second and third fiscal years or any year thereafter. The total direct and indirect costs to a typical business in the first three fiscal years is \$210.00 (\$200.00 + \$5.00 + \$5.00).

Statewide Impact to Large Businesses

Statewide, all 27 large businesses would incur \$5,670.00 total initial costs (27 businesses x \$210.00) to comply with the proposed regulation in the first three fiscal years and \$5.00 per year ongoing thereafter for the life of the regulation. The Department does not anticipate any further costs to comply with the proposed regulation.

Creation or Elimination of Jobs within California

The proposed regulation will not create nor eliminate jobs at businesses that sell natural gas motor vehicle fuel. The proposed regulation adopts the natural gas fuel quality specifications and updates the labeling requirements for CNG and LNG fueling dispensers.

Creation of New Businesses or the Elimination of Existing Businesses in California

The Department does not anticipate the elimination or creation of new business in California with this proposed regulation. The proposed regulation adopts the natural gas fuel quality specifications and updates the labeling requirements for CNG and LNG fueling dispensers. The adoption of natural gas motor vehicle fuel quality specifications is not expected to create fuel quality compliancy issues at regulated businesses and thus should not create any undue cost burdens that compromise existing businesses or the creation of new businesses.

Expansion of Businesses Currently Doing Business in California

The Department does not anticipate that the proposed regulation will promote the expansion of California businesses. The proposed regulation does not provide pathways to, nor does it incentivize, the expansion of businesses. The proposed regulation simply adopts natural gas motor vehicle fuel specifications and updates dispenser labeling requirements.

Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment

Compared to other fossil-based motor vehicle fuels such as gasoline and diesel, natural gas motor vehicle fuels are a lower-carbon alternative fuel with significantly lower pollution forming and greenhouse gas (GHG) emissions. Continued support of low-carbon alternative fuels will help in the reduction of GHG emissions as California transitions to a net-zero carbon future. Furthermore, lowering emissions promotes public health by improving air quality, particularly for communities located near high-traffic transportation corridors. This reduction in tailpipe emissions is further attained by

increasing the concentration of hydrogen blended into natural gas because water is the only emission of hydrogen combustion. Another benefit of natural gas fuels is that they can be produced from renewable biomass-based sources such as capturing and refinement of methane emissions from dairies and landfills. RNG can be wholly used as motor vehicle fuel or blended with non-renewable natural gas fuel and can help further reduce GHG and pollution forming emissions.

EVIDENCE SUPPORTING FINDING OF NO SIGNIFICANT STATEWIDE ADVERSE ECONOMIC IMPACT DIRECTLY AFFECTING BUSINESSES

The Department determined there is no significant statewide adverse economic impact directly affecting businesses in California. After researching costs to update label requirements to meet the proposed rulemaking, the Department determined that large businesses would incur nominal costs that could not conceivably result in adverse economic impact to any one regulated business.

ESTIMATED COST OR SAVINGS TO PUBLIC AGENCIES OR AFFECTED PRIVATE INDIVIDUALS OR ENTITIES

The Department determined that the proposed regulation:

1. will not impose a mandate on local agencies or school districts. The proposed regulation does not mandate local county agencies to register, test, and seal CNG/LNG commercial devices. It is California law that provides local county offices of weights and measures with that oversight authority and responsibility. Besides local county offices of weights and measures, no other public agency or special district has oversight authority in this matter.

2. will not result in any cost or savings to any other state agency. The proposed regulation will not involve the oversight activity or expenses of any other state agency. No other state agency has statutory authority to oversee and enforce the proposed regulation.

3. will not result in any reimbursable costs or savings under Part 7 (commencing with Section 17500) of Division 4 of the Government Code to local agencies or school districts. The proposed regulation does not involve state-mandated local programs and does not provide for reimbursable costs regulated under Government Code Division 4, Part 7, Section 17500.

4. will not result in any nondiscretionary costs or savings to local agencies or school districts. For the reasons stated in Number 1. above, the proposed regulation will not result in any nondiscretionary costs or savings to local agencies or school districts.

5. will not result in any cost or savings in federal funding to the state. Neither federal nor California law provides for federal funding to oversee and enforce natural gas motor

vehicle fuel quality specifications and dispenser labeling requirements. The proposed regulation does not impose any costs or savings of federal funding to California.

Public Agencies

Public agencies that own and operate natural gas motor vehicle fueling stations are exempt from the proposed regulations as the Department does not have legal authority over these entities pursuant to AG Opinion No. SO 77-13. The proposed regulation does not mandate local county agencies to register, test, and seal CNG/LNG commercial devices. It is California law that provides local county offices of weights and measures with that oversight authority and responsibility. This proposed regulation would not change this mandate, and therefore does not affect local county offices of weights and measures.

Private Individuals

The Department does not anticipate the proposed regulation to generate costs or savings to private individuals who purchase natural gas motor vehicle fuels at retail. The cost to fueling station owners to upgrade dispenser labels is nominal and the impact on fuel pricing is anticipated to be insignificant.

DUPLICATION OR CONFLICT WITH FEDERAL REGULATIONS

The proposed regulation is not in conflict with any federal regulations. Moreover, the proposed regulation is not mandated by federal law or regulation.

REASONABLE ALTERNATIVES TO THE REGULATIONS AND THE DEPARTMENT'S REASONS FOR REJECTING THOSE ALTERNATIVES

The Department must determine that no reasonable alternative it considered or that has otherwise been identified and brought to its attention would be more effective in carrying out the purpose for which the action is proposed, would be as effective and less burdensome to affected private persons than the proposed action, or would be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

Alternative 1 – Do Nothing

The Department would not comply with BPC Section 13440 (a) if it did not propose this rulemaking action. It is California law that requires the Department to adopt the latest ASTM International specifications for natural gas as motor vehicle fuel. Doing nothing would equate to the Department ignoring the existence of *ASTM D8080* and *D8487*, which have industry support in California. No specification for natural gas sold as a

motor vehicle fuel would be enforced by the Department. The Department would continue to enforce MN labeling requirements that reflect a MN calculation that is not as optimized as the MN calculation in *ASTM D8221*. Updated labeling requirements would not be adopted. Consequently, current label requirements would not be harmonized with the proposed fuel specifications and would leave natural gas fuel customers less informed or misinformed when making fuel grade and value-based comparisons. Therefore, the Department does not support this alternative.

The Department has not identified any other reasonable alternatives to the proposed regulations but encourages comments and suggestions for other possible alternatives.

TECHNICAL, THEORETICAL, AND/OR EMPIRICAL STUDY, REPORTS, OR DOCUMENTS

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- National Renewable Energy Laboratory, <u>https://www.nrel.gov/</u>, "Hydrogen Blending into Natural Gas Pipeline Infrastructure: Review of the State of Technology," <u>https://www.nrel.gov/docs/fy23osti/81704.pdf</u>, October 2022, accessed on 9/6/2023.
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- United States Department of Energy, Energy Efficiency & Renewable Energy (EERE), Alternative Fuels Data Center, <u>https://www.energy.gov/</u>, "Alternative Fueling Station Locator," <u>https://afdc.energy.gov/stations/#/analyze?region=US-CA&fuel=CNG&fuel=LNG</u>, No publication date found, accessed on 10/31/2023.
- Department of Food and Agriculture, Division of Measurement Standards, <u>https://www.cdfa.ca.gov/dms</u>, "DMS – 9: Jurisdiction Over Municipal Devices," excerpt from Office of the Attorney General, <u>https://oag.ca.gov</u>, "Jurisdiction Over Commercially Used Devices," Opinion No. SO 77-13 – November 22, 1977, hardcopy accessed on 6/9/2022.
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