SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Environmental Assessment for Proposed Rule 1147 – NOx Reductions from Miscellaneous Sources

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PREFACE

This document constitutes the Final Environmental Assessment (EA) for Proposed Rule 1147 – NOx Emissions from Miscellaneous Sources. The Draft EA was released for a 30-day public review and comment period from October 16, 2008 to November 14, 2008. No comment letters were received from the public relative to the Draft EA. The environmental analysis in the Draft EA concluded that proposed Rule 1147 would not generate any significant adverse environmental impacts.

Minor modifications were made to the proposed rule subsequent to release of the Draft EA for public review. To facilitate identifying modifications to the document, added and/or modified text is underlined. Staff has reviewed these minor modifications and concluded that they do not make any impacts substantially worse or change any conclusions reached in the Draft EA. As a result, these minor revisions do not require recirculation of the document pursuant to CEQA Guidelines §15088.5. Therefore, this document now constitutes the Final EA for proposed Rule 1147.

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INTRODUCTION

The California Legislature created the South Coast Air Quality Management District (SCAQMD) in 1977[1] as the agency responsible for developing and enforcing air pollution control rules and regulations in the South Coast Air Basin (Basin) and portions of the Salton Sea Air Basin and Mojave Desert Air Basin referred to herein as the district. By statute, the SCAQMD is required to adopt an air quality management plan (AQMP) demonstrating compliance with all federal and state ambient air quality standards for the district[2]. Furthermore, the SCAQMD must adopt rules and regulations that carry out the AQMP[3]. The 2007 AQMP concluded that major reductions in emissions of volatile organic compounds (VOCs), oxides of sulfur (SOx) and oxides of nitrogen (NOx) are necessary to attain the air quality standards for ozone and particulate matter (PM10 and PM2.5). Ozone, a criteria pollutant, is formed when VOCs react with NOx in the atmosphere and has been shown to adversely affect human health. NOx also contributes to the formation of PM10 and PM2.5.

PR 1147 implements AQMP control measures CMB-01 (NOx Reductions from Non-RECLAIM Ovens, Dryers, and Furnaces) and MCS-01 (Facility Modernization). The objective of PR 1147 is to reduce emissions of nitrogen oxides (NOx) from miscellaneous gas and liquid fuel fired combustion equipment. The proposed rule will regulate equipment that is not specifically addressed in rules under SCAQMD Regulation XI – Source Specific Standards. Proposed Rule 1147 applies to combustion equipment including, but not limited to: ovens, dryers, dehydrators, heaters, kilns, calciners, furnaces, heated pots, cookers, roasters, fryers, closed and open heated tanks and evaporators, distillation units, degassing units, incinerators, and soil remediation units. This proposed rule does not apply to solid fuel fired combustion equipment, internal combustion engines regulated under SCAQMD Rule 1110.2, gas turbines regulated by Rule 1134, charbroilers regulated by Rule 1138, refinery boilers regulated by Rule 1109, water heaters regulated by Rule 1121, thermal fluid heaters or enclosed process heaters subject to Rules 1146, 1146.1, or 1146.2. PR 1147 requires new, modified, relocated and in-use combustion equipment subject to the rule to comply with equipment specific NOx emission limits.

Compliance is phased in for equipment based on age. Beginning July 1, 2010, equipment that is 25 years or older must meet an emission limit, followed a year later by equipment that is 20 to 25 years old and then equipment that is 15 years old. Exceptions to the basic schedule include soil remediation equipment that must comply on or after January 1, 2011, when a combustion modification or change of location occurs or when a new unit begins operating. PR 1147 provides additional time for specific categories of equipment that have recently replaced burners or have a permit limit of less than one pound per day NOx at the time of rule adoption. These dates are: 2014 to achieve the federal PM 2.5 standard and 2023 to achieve the federal 8-hour ozone standard. The proposed rule is

[1] The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., ch 324 (codified at Health & Safety Code, §§40400-40540).
[2] Health & Safety Code, §40460 (a).
[3] Health & Safety Code, §40440 (a).

estimated to reduce annual average emissions of NOx by 3.5 tons per day by 2014 and will increase the NOx reduction to 3.8 tons per day by 2023.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

PR 1147 regulates NOx emissions from combustion equipment including, but not limited to: ovens, dryers, dehydrators, heaters, kilns, calciners, furnaces, heated pots, cookers, roasters, fryers, closed and open heated tanks and evaporators, distillation units, degassing units, incinerators, and soil remediation units. Because the proposed project requires discretionary approval by a public agency, it is a "project" as defined by the California Environmental Quality Act (CEQA). SCAQMD is the lead agency for the proposed project and has prepared this final Environmental Assessment (EA) with no significant adverse impacts pursuant to its Certified Regulatory Program. California Public Resources Code §21080.5 allows public agencies with regulatory programs to prepare a plan or other written document in lieu of an environmental impact report once the Secretary of the Resources Agency has certified the regulatory program. SCAQMD's regulatory program was certified by the Secretary of the Resources Agency on March 1, 1989, and is codified as SCAQMD Rule 110. Pursuant to Rule 110, SCAQMD has prepared this final EA.

CEQA and Rule 110 require that potential adverse environmental impacts of proposed projects be evaluated and that feasible methods to reduce or avoid significant adverse environmental impacts of these projects be identified. To fulfill the purpose and intent of CEQA, the SCAQMD has prepared this final EA to address the potential adverse environmental impacts associated with the proposed project. The final EA is a public disclosure document intended to: (a) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental effects of the proposed project; and, (b) be used as a tool by decision makers to facilitate decision making on the proposed project.

SCAQMD's review of the proposed project shows that the project would not have a significant adverse effect on the environment. Therefore, pursuant to CEQA Guidelines §15252, no alternatives or mitigation measures are required to be included in this final EA. The analysis in Chapter 2 supports the conclusion of no significant adverse environmental impacts.

PROJECT LOCATION

PR 1147 would apply to applicable combustion equipment within the jurisdiction of the SCAQMD. The SCAQMD has jurisdiction over an area of 10,473 square miles, consisting of the four-county South Coast Air Basin (Basin) and the Riverside County portions of the Salton Sea Air Basin (SSAB) and the Mojave Desert Air Basin (MDAB). The Basin, which is a subarea of the district, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The 6,745 square-mile Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB and MDAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal non-attainment area (known as the

Coachella Valley Planning Area) is a subregion of both Riverside County and the SSAB and is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (Figure 1-1).

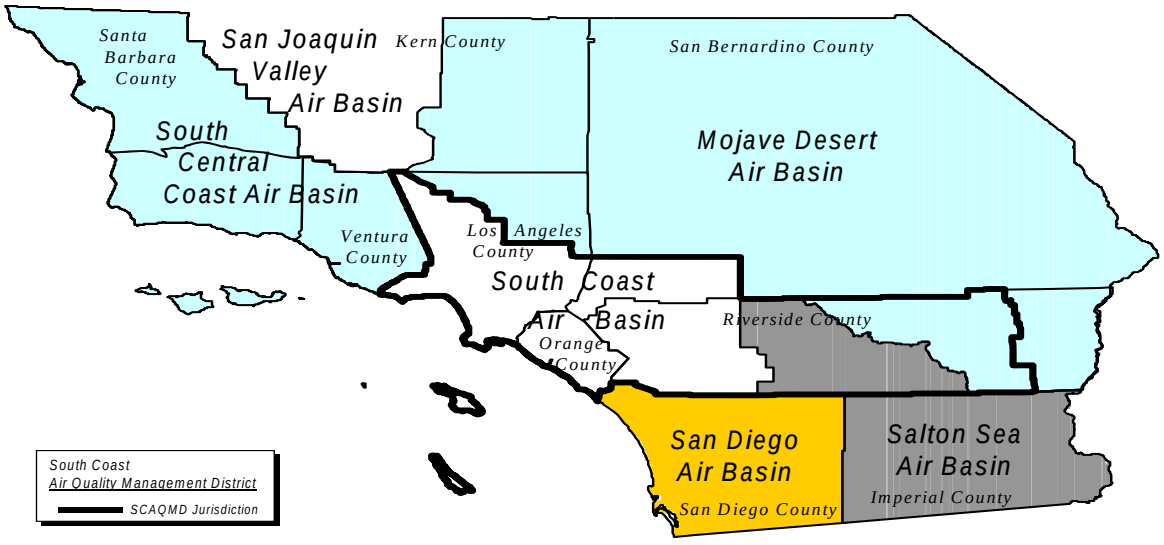

Figure 1-1
Boundaries of the South Coast Air Quality Management District

PROJECT OBJECTIVE

The general project objectives of PR 1147 are summarized as the following:

- Implement two 2007 AQMP control measures (CMB-01 and MCS-01)
- Regulate relatively uncontrolled NOx sources
- Reduce annual average emissions of NOx by at least 3.5 tons per day by 2014 and 3.8 tons per day by 2023
- Obtain NOx emissions reductions that will contribute to attain and maintain state and federal PM 2.5 and eight-hour ozone standards
- Promote facility modernization and implementation of BACT.

PROJECT BACKGROUND

PR 1147 would implement two control measures from the SCAQMD 2007 Air Quality Management Plan (AQMP): control measures CMB-01 and MCS-01. Control measure CMB-01 (NOx Reductions from Non-RECLAIM Ovens, Dryers, and Furnaces) proposes reductions of nitrogen oxides (NOx) from ovens, dryers, kilns, furnaces and other

equipment and process which are not currently regulated by SCAQMD Regulation XI – Source Specific Standards. Control measure MCS-01 (Facility Modernization) is a new control measure developed for the 2007 AQMP that would require affected facility operators to upgrade or replace their existing stationary source equipment with the cleanest equipment or technologies available. Facility modernization would require equipment to meet best available control technology (BACT) emission limits at the end of the equipment's useful life through equipment replacement.

New, modified, or relocated equipment that would be subject to PR 1147 must currently meet the requirements of SCAQMD Regulation XIII – New Source Review (NSR), while existing equipment must comply with applicable rules in SCAQMD Regulation IV – Prohibitions. Equipment subject to NSR must meet a number of requirements, but the most important are BACT requirements and offsetting emission increases. The SCAQMD's NSR program includes pre-construction permit review requirements for equipment and processes subject to permit requirements. Equipment that is subject to NSR is required to utilize BACT and include: new equipment, relocation of existing permitted equipment, or modification of existing permitted equipment when the modification results in an emissions increase. BACT is defined as the most stringent emission limitation or control technique which: has been achieved in practice, is contained in any state implementation plan (SIP) approved by EPA, or is any other emission limitation or control technique found by the Executive Officer to be technologically feasible and is cost-effective as compared to adopted rules or measured listed in the AQMP.

Regulation IV includes a number of prohibitory rules that regulate most criteria pollutants. Regulation IV rules establish a limit or emissions reduction requirement and regulated sources are prohibited from exceeding applicable limits or requirements. However, emission limits required by BACT are more stringent than the emission limits in Regulation IV. For example, Rule 474 – Fuel Burning Equipment – Oxides of Nitrogen, has emission limits that vary from 125 ppm to 400 ppm (referenced to three percent oxygen) depending upon the fuel and heat input rating of the equipment. NOx emission limits for combustion equipment subject to PR 1147 vary from 60 ppm to 20 ppm (referenced to three percent oxygen).

Proposed Rule 1147 affects manufacturers (NAICS 333), distributors and wholesalers (NAICS 423) of combustion equipment, as well as owners and operators of ovens, dryers, furnaces, and other equipment in the district (NAICS 23, 31, 32, and 33, respectively). The units affected by the proposed rule are used in industrial, commercial and institutional settings for a wide variety of processes. The approximately 6,600 units subject to the emission limits of PR 1147 are located at approximately 3,000 facilities. However, approximately 1,600 units located at approximately 800 facilities currently meet the NOx emission limits of PR 1147. Staff estimates that there are as many as 2,500 permitted units (excluding remediation units) with NOx emission limits greater than one pound per day that will potentially become subject to the proposed emission limits of PR 1147 between 2010 and 2014. An additional 2,500 permitted units with NOx emission limits of less than one pound per day will become subject to the emission limits of the proposed rule between 2015 and 2019. In addition, staff estimates that 100

to 200 remediation units per year will become subject to the NOx emission limits of PR 1147 starting in 2011, and all units will be required to meet the applicable NOx emission limit by 2023.

PROJECT DESCRIPTION

The following summarizes the key components of the proposed rule. A copy of PR 1147 is included in Appendix A.

Purpose and Applicability [subdivision (a)]

The purpose of PR 1147 is to reduce NOx emissions from gaseous and liquid fuel fired combustion equipment. PR 1147 applies to permitted equipment and processes that are not currently regulated under an existing source specific rule under SCAQMD Regulation XI. The equipment regulated by PR 1147 include, but are not limited to: ovens, dryers, dehydrators, heaters, kilns, calciners, furnaces, heated pots, cookers, roasters, fryers, closed and open heated tanks and evaporators, distillation units, degassing units, incinerators, soil remediation units. This proposed rule does not apply to solid fuel fired combustion equipment, internal combustion engines regulated under SCAQMD Rule 1110.2, gas turbines regulated by Rule 1134, charbroilers regulated by Rule 1138, refinery boilers regulated by Rule 1109, water heaters regulated by Rule 1121, thermal fluid heaters or enclosed process heaters subject to Rules 1146, 1146.1, or 1146.2. PR 1147 requires new, modified, relocated and in-use combustion equipment subject to the rule to comply with equipment specific NOx emission limits. In addition, PR 1147 does not apply to equipment subject to SCAQMD Rules 1111, 1112, 1117, or 1135.

Definitions [subdivision (b)]

The following definitions are included in PR 1147:

- "Annual capacity factor" [paragraph (b)(1)]
- "Annual heat input" [paragraph (b)(2)]
- "BTU" [paragraph (b)(3)]
- "Combustion modification" [paragraph (b)(4)]
- "Heater" [paragraph (b)(5)]
- "Heat input" [paragraph (b)(6)]
- "Heat output" [paragraph (b)(7)]
- "Independent testing laboratory" [paragraph (b)(8)]
- "NOx emissions" [paragraph (b)(9)]
- "Process heater" [paragraph (b)(10)]
- "Protocol" [paragraph (b)(11)]
- "Rated heat input capacity" [paragraph (b)(12)]
- "Responsible official" [paragraph (b)(13)]

- "Therm" [paragraph (b)(14)]
- "Unit" [paragraph (b)(15)]

Requirements [subdivision (c)]
PR 1147 requires new, modified, relocated and in-use combustion equipment subject to the rule to comply with the equipment specific NOx emission limits listed in Table 1-1. In addition to limits for specific equipment, PR 1147 also includes limits based on process temperature. The proposed emission limits are based on SCAQMD BACT determinations, recent SCAQMD permit applications and associated sources tests, and discussions with burner manufacturers and vendors. Other criteria considered by SCAQMD staff in selection of the proposed NOx limits include cost effectiveness and availability from multiple manufacturers.

Table 1-1
Proposed NO_x Emission Limits

Equipment Category(ies)	**NOx Emission Limit** PPM @ 3% O_2, dry or Pound/mmBtu heat input		
	Process Temperature		
Gaseous Fuel-Fired Equipment	≤ 800° F	> 800 ° F and < 1200° F	≥ 1200 ° F
Asphalt Manufacturing Operation	40 ppm	40 ppm	60 ppm or 0.073 lb/mmBtu
Afterburner, Degassing Unit, Remediation Unit, Thermal Oxidizer, Catalytic Oxidizer or Vapor Incinerator [1]	30 ppm or 0.036 lb/mmBtu	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Evaporator, Fryer, Heated Process Tank, or Parts Washer	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Metal Heat Treating, Metal Melting Furnace, Metal Pot, or Tar Pot	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Oven, Dehydrator, Dryer, Heater, Kiln, Crematory, Incinerator, Calciner, Cooker, Roaster, Furnace, or Heated Storage Tank	30 ppm or 0.036 lb/mmBtu	30 ppm or 0.036 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Make-Up Air Heater or other Air Heater located outside of building with temperature controlled zone inside building	30 ppm or 0.036 lb/mmBtu	30 ppm or 0.036 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Tenter Frame or Fabric or Carpet Dryer	30 ppm or 0.036 lb/mmBtu	30 ppm or 0.036 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Other Unit or Process Temperature	30 ppm or 0.036 lb/mmBtu	30 ppm or 0.036 lb/mmBtu	60 ppm or 0.073 lb/mmBtu

Table 1-1
Proposed NO_x Emission Limits (Concluded)

Equipment Category(ies)	NOx Emission Limit PPM @ 3% O_2, dry or Pound/mmBtu heat input		
	Process Temperature		
Liquid Fuel-Fired Equipment	≤ 800° F	> 800 ° F and < 1200° F	≥ 1200 ° F
All liquid fuel-fired Units	40 ppm or 0.053 lb/mmBtu	40 ppm or 0.053 lb/mmBtu	60 ppm or 0.080 lb/mmBtu

1 Emission limit applies to burners in units fueled by 100% natural gas that are used to incinerate air toxics, VOCs, or other vapors; or to heat a unit. The emission limit applies solely when burning 100% fuel and not when the burner is incinerating air toxics, VOCs, or other vapors. The unit shall be tested or certified to meet the emission limit while fueled with natural gas.

As specific NOx limits have not been made for every category of equipment and it is possible to group equipment based on process characteristics, Table 1-1 also includes NOx emission limits for unspecified equipment based on process temperature. Higher process temperatures result in higher NOx emissions and this is reflected in the NOx limits in Table 1-1.

Compliance dates for in-use equipment to meet NOx emission limits are listed in Table 1-2. Compliance is phased in for equipment based on age starting July 1, 2010. Equipment that is at least 25 years old must meet the emission limit by 2010. Equipment that is 20 to 25 years old must meet the emission limit by 2011. Equipment that is 15 years old must meet the emission limit by 2012.

Table 1-2
Compliance Schedule for In-Use Units

Equipment Category(ies)	Compliance Date
Remediation unit; Upon combustion modification or change of location for units manufactured prior to 1998	Beginning January 1, 2011
Tar pot; Permit application for change of ownership or new equipment	Beginning January 1, 2012
Afterburner, degassing unit, catalytic oxidizer, thermal oxidizer, vapor incinerator, evaporator, food oven, fryer, heated process tank, parts washer or spray booth make-up air heater manufactured prior to 1998	July 1, 2013
Other unit manufactured prior to 1986	July 1, 2010
Other unit manufactured prior to 1992	July 1, 2011
Other unit manufactured prior to 1998	July 1, 2012
Any unit manufactured after 1997	July 1 of the year the unit is 15 years old

The compliance schedule for afterburners, degassing equipment, catalytic and thermal oxidizers, evaporators, vapor incinerators, heated process tanks, food ovens, fryers, parts washers and spray booth make-up air heaters differs in order to allow manufacturers additional time to certify equipment and develop a greater number of compliant equipment.
PR 1147 provides additional time for operators of specific categories of equipment who have recently replaced burners or have a permit limit of less than one pound per day NOx at the time of rule adoption according to the following criteria:

- Units with 75 percent or more of the burner capacity replaced before adoption of the rule have an additional ten years from the date of the burner modification to meet the emission limit.
- Units with emissions of less than one pound per day have five additional years to comply with the emission limit.

Additional requirements include keeping records of maintenance and combustion modifications and installation of meters to monitor fuel and equipment use. The recordkeeping and metering requirements start January 1, 2011.

Compliance Determination and Certification [subdivisions (d) and (e)]
PR 1147 identifies test methods for determining compliance with rule requirements and establishes a framework for manufacturers who wish to certify the emission level of their products. Two of the approved test methods use portable analyzers and one approved method is used to determine compliance with the lb/mmBtu emission limit option. Emissions testing using the lb/mmBtu compliance option is one alternative for evaluating emissions from processes that operate at high oxygen concentrations (18 percent or more).

Instead of requiring owners and operators of affected units to re-test each unit after a number of years, staff is proposing to implement a program of random testing to determine if specific categories of equipment might require routine testing to assure compliance with the emission limit. This testing program could be implemented starting in 2012 after half of the equipment have replaced burners and completed their initial source tests and manufacturers have certified equipment.

Enforcement [subdivision (f)]
Copies of source test results and certifications must be kept on site by the operators of affected units and made available to the SCAQMD upon request. The SCAQMD will inspect distributors, retailers and installers as well as operators and conduct tests as necessary to ensure compliance of affected units.

Exemptions [subdivision (g)]
Exemptions are provided for equipment and processes that are regulated by other SCAQMD source specific rules in Regulation XI. An exemption is also provided for flare, afterburner, degassing unit, remediation unit, thermal oxidizer, catalytic oxidizer, and vapor incinerator processes in which a fuel, including but not limited to natural gas, propane, butane or liquefied petroleum gases, is mixed with air toxics, VOCs or other combustible vapors prior to incineration in the unit in order to start-up or maintain combustion or temperature in the unit. This exemption does not apply to a burner with a separate fuel line used to heat up or maintain temperature of a unit or incinerate air toxics, VOCs or other combustible vapors in a gas stream moving past the burner flame.

An exemption is also provided for flares, afterburners, degassing units, thermal oxidizers or vapor incinerators in which a fuel; including but not limited to natural gas, propane, butane or liquefied petroleum gases; is only used to maintain a pilot for vapor ignition. PR 1147 also exempts solid fuel-fired units and provides an exemption for existing afterburners incorporating a heat exchanger that captures heat from and oven or furnace.

PR 1147 additionally provides a temporary exemption from the NOx emission limit for new afterburners, degassing units, thermal and catalytic oxidizers, vapor incinerators, and spray booth make-up air heaters installed after adoption of PR 1147 and before January 1, 2011. New food ovens, fryers, heated process tanks, parts washers, and evaporators installed after the date of adoption and before January 1, 2013 are also exempt from the emission limit in Table 1-1 at the time of installation. These two categories of units must comply with the NOx emission limit on or before July 1 of the year the unit becomes 15 years old. New and relocated remediation units installed before January 1, 2011 are exempt until the unit is moved or a combustion modification is made.

SUMMARY OF AFFECTED EQUIPMENT AND METHODS OF COMPLIANCE

The approximately 6,600 units subject to the emission limits of PR 1147 are located at approximately 3,000 facilities. However, approximately 1,600 units located at approximately 800 facilities currently meet the NOx emission limits of PR 1147. Staff estimates that there are as many as 2,500 permitted units (excluding remediation units) with NOx emission limits greater than one pound per day that will potentially become subject to the proposed emission limits of PR 1147 between 2010 and 2014. An additional 2,500 permitted units with NOx emission limits of less than one pound per day will become subject to the emission limits of the proposed rule between 2015 and 2019. In addition, staff estimates that 100 to 200 remediation units per year will become subject to the NOx emission limits of PR 1147 starting in 2011, and all units will be required to meet the applicable NOx emission limit by 2023.

Compliance with the NOx emission limits in PR 1147 is expected to be achieved primarily by installing ultra-low NOx burners. For existing equipment, compliance with PR 1147 means that the owner/operator will either retrofit the existing unit with an ultra-low NOx burner that has been guaranteed by the manufacturer as compliant with the NOx emission standard or if the existing unit is at the end of its useful life, replace it with a

new compliant unit. Retrofitting an existing unit would consist of utilizing a retrofit kit that requires removing the existing burner and replacing it with a compliant, ultra-low NOx burner. Similarly, compliance with PR 1147 for a new unit means that the equipment, at the time of manufacture, will be equipped with compliant ultra-low NOx burner technology that has been guaranteed by the manufacturer to achieve the NOx emission standards. No add-on control equipment is expected to be used for either new or existing units to comply with the new NOx emission limits because compliance with the proposed NOx limits can be achieved with ultra-low NOx burners. Selective Catalytic Reduction (SCR) technology is a compliance option; however, it was not assumed due to the size of affected equipment (majority of equipment is assumed to be <10mmBTU) and the cost benefit of retrofitting equipment with ultra-low NOx burners compared to SCR.

Table 1-3 provides a summary of the various types of equipment that will be affected, the proposed emission limits, the compliance method and the associated impacts.

Table 1-3
Summary of Equipment Categories, Proposed NOx Emission Limits, Compliance Methods and Impacts

Equipment Category(ies)	**NOx Emission Limit** PPM @ 3% O_2, dry or Pound/mmBtu heat input		
	Process Temperature		
Gaseous Fuel-Fired Equipment	≤ 800° F	> 800 ° F and < 1200° F	≥ 1200 ° F
Asphalt Manufacturing Operation	40 ppm	40 ppm	60 ppm or 0.073 lb/mmBtu
Afterburner, Degassing Unit, Remediation Unit, Thermal Oxidizer, Catalytic Oxidizer or Vapor Incinerator [1]	30 ppm or 0.036 lb/mmBtu	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Evaporator, Fryer, Heated Process Tank, or Parts Washer	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Metal Heat Treating, Metal Melting Furnace, Metal Pot, or Tar Pot	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Oven, Dehydrator, Dryer, Heater, Kiln, Crematory, Incinerator, Calciner, Cooker, Roaster, Furnace, or Heated Storage Tank	30 ppm or 0.036 lb/mmBtu	30 ppm or 0.036 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Make-Up Air Heater or other Air Heater located outside of building with temperature controlled zone inside building	30 ppm or 0.036 lb/mmBtu	30 ppm or 0.036 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Tenter Frame or Fabric or Carpet Dryer	30 ppm or 0.036 lb/mmBtu	30 ppm or 0.036 lb/mmBtu	60 ppm or 0.073 lb/mmBtu
Other Unit or Process Temperature	30 ppm or 0.036 lb/mmBtu	30 ppm or 0.036 lb/mmBtu	60 ppm or 0.073 lb/mmBtu

Table 1-3
Summary of Equipment Categories, Proposed NOx Emission Limits, Compliance Methods and Impacts (Concluded)

Equipment Category(ies)	NOx Emission Limit PPM @ 3% O_2, dry or Pound/mmBtu heat input		
	Process Temperature		
Liquid Fuel-Fired Equipment	≤ 800° F	> 800 ° F and < 1200° F	≥ 1200 ° F
All liquid fuel-fired Units	40 ppm or 0.053 lb/mmBtu	40 ppm or 0.053 lb/mmBtu	60 ppm or 0.080 lb/mmBtu

1 Emission limit applies to burners in units fueled by 100% natural gas that are used to incinerate air toxics, VOCs, or other vapors; or to heat a unit. The emission limit applies solely when burning 100% fuel and not when the burner is incinerating air toxics, VOCs, or other vapors. The unit shall be tested or certified to meet the emission limit while fueled with natural gas.

CHAPTER 2-ENVIRONMENTAL CHECKLIST

Introduction

General Information

Environmental Factors Potentially Affected

Determination

Environmental Checklist and Discussion

INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's potential adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

GENERAL INFORMATION

Project Title:	Proposed Rule 1147 – NOx Reductions From Miscellaneous Sources
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive Diamond Bar, CA 91765
CEQA Contact Person:	Mr. Jeffrey Inabinet (909) 396-2453
Rule 1147 Contact Person	Mr. Wayne Barcikowski (909) 396-3077
Project Sponsor's Name:	South Coast Air Quality Management District
Project Sponsor's Address:	21865 Copley Drive Diamond Bar, CA 91765
General Plan Designation:	Not applicable
Zoning:	Not applicable
Description of Project:	PR 1147 will reduce NOx emissions from a large variety of equipment and processes that are currently required to have an SCAQMD permit to operate, but whose NOx emissions are not regulated by SCAQMD Regulation XI. The equipment regulated by PR 1147 include, but are not limited to: ovens, dryers, dehydrators, heaters, kilns, calciners, furnaces, heated pots, cookers, roasters, fryers, closed and open heated tanks and evaporators, distillation units, degassing units, incinerators, and soil remediation units. PR 1147 requires new, modified, relocated and in-use combustion equipment subject to the rule to comply with equipment specific NOx emission limits (varies from 20-60 ppm based on specific equipment category). The proposed emission limits are based on SCAQMD surveys of applicable control technologies, recent SCAQMD permit applications and associated sources tests, and discussions with burner manufacturers and vendors. The proposed rule is estimated to reduce annual average emissions of NOx by 3.5 tons per day by 2014 and 3.8 tons per day by 2023.
Surrounding Land Uses and Setting:	Not applicable.
Other Public Agencies Whose Approval is Required:	Not applicable.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with an "✓" may be adversely affected by the proposed project. An explanation relative to the determination of impacts can be found following the checklist for each area.

☐ Aesthetics	☐ Agriculture Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Hazards & Hazardous Materials	☐ Hydrology/ Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Solid/Hazardous Waste	☐ Transportation/ Traffic	☐ Mandatory Findings of Significance

DETERMINATION

On the basis of this initial evaluation:

☑ I find the proposed project, in accordance with those findings made pursuant to CEQA Guideline §15252, COULD NOT have a significant effect on the environment, and that an ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will NOT be significant effects in this case because revisions in the project have been made by or agreed to by the project proponent. An ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.

☐ I find that the proposed project MAY have a significant effect(s) on the environment, and an ENVIRONMENTAL ASSESSMENT will be prepared.

☐ I find that the proposed project MAY have a "potentially significant impact" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL ASSESSMENT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL ASSESSMENT pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL ASSESSMENT, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: October 16, 2008 **Signature:** Steve Smith

Steve Smith, Ph.D.
Program Supervisor

ENVIRONMENTAL CHECKLIST AND DISCUSSION

As discussed in Chapter 1, the main focus of PR 1147 is to reduce NOx emissions from a large variety of equipment and processes that are currently required to have an SCAQMD permit to operate, but whose NOx emissions are not regulated by SCAQMD Regulation XI. The equipment regulated by PR 1147 include, but are not limited to: ovens, dryers, dehydrators, heaters, kilns, calciners, furnaces, heated pots, cookers, roasters, fryers, closed and open heated tanks and evaporators, distillation units, degassing units, incinerators, and soil remediation units. PR 1147 requires new, modified, relocated and in-use combustion equipment subject to the rule to comply with equipment specific NOx emission limits (varies from 20-60 ppm based on specific equipment category). As a result, the proposed rule is estimated to reduce annual average emissions of NOx by 3.5 tons per day by 2014 and 3.8 tons per day by 2023.

Manufacturers, distributors, retailers, refurbishers, installers and operators of both existing and new units will be expected to comply with the proposed requirements in PR 1147. Compliance with PR 1147 for an existing unit means that the operator will either replace the existing unit with a new compliant unit at the end of the equipment's useful life or retrofit the equipment with an ultra-low NOx burner that has been certified by the manufacturer as compliant with the NOx emission standard on a retrofit basis. Similarly, compliance with PR 1147 for a new unit means that the equipment, at the time of manufacture, will be equipped with compliant ultra-low NOx burner technology that has been guaranteed by the manufacturer to achieve the NOx emission standards. Further, no add-on control equipment is expected to be used for either new or existing units to comply with the new NOx emission limits. As a result, complying with PR 1147 is expected to require minor activities using welders, forklifts, etc., to remove and install new equipment or replace old burners with compliant low NOx burners. Since compliant equipment or low NOx burners will be installed in existing equipment locations, no site preparation or grading activities requiring large construction equipment will be necessary. Thus, answers to the following checklist items are based on the assumption that compliant ultra-low NOx burner technology, either at the time of manufacture or retrofit, will be used to meet the requirements of PR 1147.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
I. AESTHETICS. Would the project:			
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☑
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☑
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☑

	Potentially Significant Impact	Less Than Significant Impact	No Impact
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☑

Significance Criteria
The proposed project impacts on aesthetics will be considered significant if:

- The project will block views from a scenic highway or corridor.
- The project will adversely affect the visual continuity of the surrounding area.
- The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.

Discussion
I.a), b), c) & d) PR 1147 applies to equipment and processes that are required to have an SCAQMD permit to operate whose NOx emissions are not regulated by SCAQMD Regulation XI. Compliance with PR 1147 will be achieved by either installing new compliant units or retrofitting existing units by replacing existing burners with ultra-low NOx burner technology, generally at existing facilities. The footprint of a compliant new replacement unit versus the footprint of an existing, retrofitted unit that meets the ultra-low NOx standards as proposed in PR 1147 is not expected to be substantially different from each other. Whether owners/operators replace their existing units with new compliant units or retrofit their existing units with ultra-low NOx burners, implementation of PR 1147 would not require the construction of new buildings or other structures that would obstruct scenic resources or degrade the existing visual character of a site, including but not limited to, trees, rock outcroppings, or historic buildings. Further, PR 1147 would not involve the demolition of any existing buildings or facilities, require any subsurface activities, require the acquisition of any new land or the surrendering of existing land, or the modification of any existing land use designations or zoning ordinances. Thus, the proposed project is not expected to degrade the visual character of any site where a facility is located and that operates an affected unit or its surroundings, affect any scenic vista, damage scenic resources. Since the proposed project does not require existing facilities to operate at night, it is not expected to create any new source of substantial light or glare.

Based upon these considerations, significant adverse aesthetics impacts are not anticipated and will not be further analyzed in this final EA. Since no significant aesthetics impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
II.	**AGRICULTURE RESOURCES.** Would the project:			
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☑
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☑
c)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☑

Significance Criteria
Project-related impacts on agricultural resources will be considered significant if any of the following conditions are met:

- The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.
- The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.
- The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural uses.

II.a), b), & c) Compliance with PR 1147 means either installing new compliant units or retrofitting existing units with ultra-low NOx burner technology. The businesses that will be affected by the implementation of PR 1147 are located within urbanized areas that are typically designated as industrial or commercial. Therefore, installing new equipment units or retrofitting existing units to comply with PR 1147 would not result in any new construction of buildings or other structures that would convert any classification of farmland to non-agricultural use or conflict with zoning for agricultural use or a Williamson Act contract.

Based upon these considerations, significant agricultural resource impacts are not anticipated and will not be further analyzed in this final EA. Since no significant agriculture resources impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
III.	**AIR QUALITY.** Would the project:			
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☑
b)	Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☑	☐
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☑	☐
d)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑
e)	Create objectionable odors affecting a substantial number of people?	☐	☐	☑
f)	Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	☐	☐	☑

III.a) Attainment of the state and federal ambient air quality standards protects sensitive receptors and the public in general from the adverse effects of criteria pollutants which are known to have adverse human health effects. Based on the discussion under items III. b), c) and f), the lower future NOx emission limits proposed in PR 1147, contribute to carrying out the goals of the 2007 AQMP, specifically, the goals of control measure CM#2007MCS-01: Facility Modernization, by either upgrading or replacing the affected units to meet current BACT standards. Further, reducing NOx emissions from all affected PR 1147 sources helps contribute to attaining and maintaining the state and federal ambient air quality standards. Thus, because PR 1147 implements a portion of this control measure in the 2007 AQMP which results in achieving NOx reductions, the proposed project does not obstruct implementation of the applicable AQMP.

III.b), c) & f) For a discussion of these items, refer to the following analysis.

Air Quality Significance Criteria

To determine whether or not air quality impacts from adopting and implementing the proposed amendments are significant, impacts will be evaluated and compared to the criteria in Table 2-1. If impacts equal or exceed any of the criteria in Table 2-1, air quality impacts will be considered significant. All feasible mitigation measures will be identified and implemented to reduce significant impacts to the maximum extent feasible.

Construction Air Quality Impacts

Compliance with PR 1147 means that owners/operators of the affected combustion equipment will either replace their existing equipment at the end of the equipment's useful life and install

new equipment with compliant ultra-low NOx burners already installed, or retrofit their existing equipment by replacing the old burners with new, compliant ultra-low NOx burners.

Any operator who chooses to install new equipment or retrofit an existing unit to comply with PR 1147 is not expected to construct any new buildings or other structures as part of the equipment replacement or retrofit process. However, some physical modifications would be necessary depending on whether the operator chooses to replace the existing equipment with a new unit or to retrofit the existing unit with ultra-low NOx burner. For example, for completely replacing existing equipment with new compliant equipment, the existing equipment would need to be shut down and allowed to cool, disconnected from fuel and electric utilities, dismantled and removed. For the purpose of this analysis, the new equipment is assumed to be installed at or near the location of the existing equipment.

The physical modifications that are typically involved with retrofitting existing equipment would be removing the old burners, installing new burners, and installing new or reworking existing flue gas ductwork. Specifically, owners/operators of affected facilities who choose to replace existing burners with ultra-low NOx burners will first need to pre-order and purchase the appropriate size, style and number of burners, shut down the combustion unit to let it cool, and change out the burners. The burner change-out may involve a contractor or vendor to remove the bolts, possibly cut and re-weld metal seals and re-fire the burners for equipment start-up. Additional work may be necessary such as upgrading the operation control system or installing a fuel injection system with electronic controls. Once the ultra-low NOx burners are in place, the combustion equipment can be fired up and can operate with lower NOx emissions. Thus, minimal secondary construction impacts are anticipated from the installation of the majority ultra-low NOx burners.

Table 2-1
Air Quality Significance Thresholds[4]

Mass Daily Thresholds		
Pollutant	**Construction**	**Operation**
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
Sox	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants and Odor Thresholds		
Toxic Air Contaminants (TACs) Accidental Release of Acutely Hazardous Materials (AHMs)	MICR $\geq$ 10 in 1 million ; HI $\geq$ 1.0 (project increment) CAA §112(r) threshold quantities	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	

[4] CEQA Air Quality Handbook, SCAQMD, November 1993.

Table 2-1
Air Quality Significance Thresholds (Concluded)

Ambient Air Quality for Criteria Pollutants [(a)]	
NO2 1-hour average annual average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.25 ppm (state) 0.053 ppm (federal)
PM10 24-hour average annual geometric average annual arithmetic mean	10.4 μg/m^3 (construction) [(b)] & 2.5 μg/m^3 (operation) 1.0 μg/m^3 20 μg/m^3
PM2.5 24-hour average	10.4 μg/m^3 (construction) [(b)] & 2.5 μg/m^3 (operation)
Sulfate 24-hour average	1 ug/m^3
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) 9.0 ppm (state/federal)

(a) Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.
(b) Ambient air quality threshold based on SCAQMD Rule 403.

KEY: MICR = maximum individual cancer risk; HI = Hazard Index; ug/m^3 = microgram per cubic meter; ppm = parts per million; AHM = acutely hazardous material; TAC = toxic air contaminant

To estimate what the impacts would be for installing ultra-low NOx burners, the following general assumptions were made:

- Equipment replacement would occur at the end of the equipment's useful life.
- 2,462 gaseous units that currently have NOx emissions greater than one pound per day will be retrofitted with ultra-low NOx burners between 2010 and 2014.
- 2,462 gaseous units that currently have NOx emissions equal to or less than one pound per day will be retrofitted with ultra-low NOx burners between 2015 and 2023.
- Per unit, installation of an ultra-low NOx burner will take one day.
- 492 units on average will be retrofitted per year using an average of two per day (260 work days per year).
- To provide a "worst-case analysis", it is assumed that up to 10 units will have an ultra-low NOx burner installed in the same day.
- One contractor/vendor plus one welder per unit will be needed to retrofit existing equipment with an ultra-low NOx burner.
- One construction worker to install one ultra-low NOx burner.
- One pick-up truck to deliver one ultra-low NOx burner.

Tables 2-2A through 2-2D summarize the peak construction emissions due to retrofits of ultra-low NOx burners between the years 2010-2014 and 2015-2023. Under both compliance scenarios, construction air quality impacts do not exceed any applicable significance thresholds. Therefore, construction air quality impacts are concluded to be less than significant. There may be limited construction emissions prior to 2010 due to early retrofitting or equipment replacement. However, this scenario is expected to include a small number of facilities, and therefore, the respective air quality impacts are concluded to be less than significant.

Table 2-2A
Peak Construction Emissions Due to Retrofits of Ultra-Low NOx Burners Between 2010-2014 for One Unit

PEAK CONSTRUCTION	VOC	CO	NOx	SOx	PM10	PM2.5
2010-2014	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
Onsite Emissions (welding machine)	0.16	0.45	0.58	0.00	0.05	0.0476
Offsite Emissions (construction worker vehicle and pick-up truck deliveries)	0.30	2.25	2.11	0.00	0.08	0.0723
Total Emissions (one unit)	0.46	2.70	2.69	0.00	0.13	0.1199
SIGNIFICANCE THRESHOLD	75	550	100	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

Table 2-2B
Peak Construction Emissions Due to Retrofits of Ultra-Low NOx Burners Between 2010-2014 for Ten Units

PEAK CONSTRUCTION	VOC	CO	NOx	SOx	PM10	PM2.5
2010-2014	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
Onsite Emissions (welding machines)	1.60	4.50	5.80	0.00	0.50	0.476
Offsite Emissions (construction worker vehicles and pick-up truck deliveries)	3.00	22.50	21.10	0.00	0.80	0.723
Peak Daily Total for 10 units installed in one day	4.60	27.00	26.90	0.00	1.30	1.20
SIGNIFICANCE THRESHOLD	75	550	100	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

Table 2-2C
Peak Construction Emissions Due to Retrofits of Ultra-Low NOx Burners Between 2015-2023 for One Unit

PEAK CONSTRUCTION	VOC	CO	NOx	SOx	PM10	PM2.5
2015-2023	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
Onsite Emissions (welding machine)	0.11	0.40	0.46	0.00	0.04	0.0384
Offsite Emissions (construction worker vehicle and pick-up truck deliveries)	0.21	1.48	1.32	0.00	0.05	0.048
Total Emissions (one unit)	0.32	1.88	1.78	0.00	0.09	0.0864
SIGNIFICANCE THRESHOLD	75	550	100	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

Table 2-2D
Peak Construction Emissions Due to Retrofits of Ultra-Low NOx Burners Between 2015-2023 for Ten Units

PEAK CONSTRUCTION 2015-2023	VOC lbs/day	CO lbs/day	NOx lbs/day	SOx lbs/day	PM10 lbs/day	PM2.5 lbs/day
Onsite Emissions (welding machines)	1.10	4.00	4.60	0.00	0.40	0.384
Offsite Emissions (construction worker vehicles and pick-up truck deliveries)	2.10	14.80	13.20	0.00	0.50	0.48
Peak Daily Total for 10 units installed in one day	3.20	18.80	17.80	0.00	0.90	0.864
SIGNIFICANCE THRESHOLD	75	550	100	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

The specific number of units that will be retrofitted on a given day is not known. Based on the peak daily impacts, however, from one unit retrofit, up to 37 units could be retrofitted on a given day, before the significance threshold is triggered. Given the time it takes to engineer, order, and deliver ultra-low NOx burners, as well as the availability of construction workers and the staggered compliance schedule, it is unlikely that 37 units would be retrofitted on a single day.

Refer to Appendix B for the construction estimates for installing ultra-low NOx burners on the affected equipment.

Summary of Operational Air Quality Impacts

The overall objective of the proposed project is to lower NOx emissions from a large variety of combustion equipment and processes. To comply with the lowered NOx emission limits in PR 1147, all affected units will either be replaced with new compliant equipment or retrofitted with compliant ultra-low NOx burners by July 1, 2013, or July 1 of the year the unit is 15 years old if the unit was manufactured after 1997. PR 1147 is expected to permanently reduce NOx emissions from these affected source categories by approximately 3.5 tons per day by 2014 and 3.8 tons per day by 2023. No other operational emissions changes are expected from implementing PR 1147.

To determine the overall emission impact of the PR 1147, staff has first examined the effects of the proposed rule per topic category.

Changes to NOx Emissions

PR 1147 would require affected equipment to meet NOx emission limits in the range of 20 ppm to 60 ppm (referenced to three percent oxygen) depending upon the process and process temperature. Table 1-1 in Chapter 1 contains a summary of the affected equipment categories and gaseous fuel limits proposed in PR 1147. The proposed compliance dates for each affected equipment category are presented in Table 1-2 in Chapter 1.

As summarized in Table 2-3, the 2002 NOx emissions inventory for equipment subject to Proposed Rule 1147 was 4.9 tons per day (2007 AQMP). The 2014 annual average inventory is projected to be 6.2 tons per day. Table 2-3 also shows the estimated NOx emission reductions and remaining emissions after implementation of proposed Rule 1147. By January 1, 2015, proposed Rule 1147 is expected to reduce the NOx inventory from affected equipment subject to the rule by 3.5 tons per day. An additional 0.3 ton of NOx per day will be reduced by 2023.

Emission reductions were calculated based on typical uncontrolled emissions, the proposed emission limits, and information from the SCAQMD permit database. Based on a review of equipment permit limits, approximately 25 percent of the equipment in each category already meet the proposed rule NOx emission limits. Staff estimates the average reduction for uncontrolled units will be approximately 75 percent. Applying a 75 percent reduction to three-fourths of the inventory produces an overall reduction of about 56 percent.

Emission reduction estimates for each rule category are based upon the number of units in that rule category and an average emission reduction per unit. Yearly reduction estimates are based on the percentage of equipment which is anticipated to be subject to the emission limits in that year. The percent of equipment subject to emission limits in each specific year is based upon a survey of the SCAQMD permit database. Emission reductions in the first five years are due to units with permitted NOx emission limits greater than one pound per day. Emission reductions in the last eight years are due to NOx reductions from units with permit limits of one pound per day or less.

Typical uncontrolled NOx emissions and projected NOx emissions reductions are presented in Table 2-3.

Table 2-3
Baseline NOx Emission Inventory and Projected NOx Emission Reductions

Fuel	Equipment Category	Typical Uncontrolled NOx Emissions	Proposed NOx Emission Limit	No. of Units	NOx Baseline Emission Inventory (tons/day)	NOx Emission Reductions (tons/day)
Natural Gas	Asphalt Operations	90-120 ppm	40 ppm	71	0.071	0.0550
	Open Heated Tank or Evaporator	120 ppm	60 ppm or 0.073 lb/mmBtu	200	0.199	0.1540
	Degassing, Incinerator, or Soil Remediation > 1200° F	120 ppm		480	0.478	0.3704
	Fryer	120 ppm		101	0.100	0.0776
	Metal Heat Treating	150-210 ppm		136	0.135	0.1048
	Metal Melting Furnace	150-210 ppm		118	0.117	0.0909
	Metal or Tar Pot	90-210 ppm		237	0.236	0.1841
	Other > 1200° F	120 ppm		295	0.293	0.2275
	Oven, Dehydrator, Dryer, Heater, etc. ≤ 800° F	120 ppm	20 ppm or 0.024 lb/mmBtu	2335	2.32	1.8019
	Degassing, Incinerator, or Soil Remediation ≤ 1200° F	120 ppm	30 ppm or 0.036 lb/mmBtu	479	0.477	0.3699

Table 2-3
Baseline NOx Emission Inventory and Projected NOx Emission Reductions (Concluded)

Fuel	Equipment Category	Typical Uncontrolled NOx Emissions	Proposed NOx Emission Limit	No. of Units	NOx Baseline Emission Inventory (tons/day)	NOx Emission Reductions (tons/day)
Natural Gas	Make Up Air Heater	120 ppm	30 ppm or 0.036 lb/mmBtu	34	0.034	0.0260
	Oven, Dehydrator, Dryer, Heater, etc. > 800 and ≤ 1200° F	120 ppm		161	0.160	0.1244
	Tenter Frame or Carpet Dryer	90-120 ppm		45	0.048	0.0347
	Other Air Heater Outside Building	120 ppm		15	0.015	0.0116
	Other with Process Temperature ≤ 1200° F	120 ppm		196	0.195	0.1511
Liquid Fuel	Liquid Fuel > 1200° F	120-180 ppm	60 ppm or 0.080 lb/mmBtu	0	0.000	0.0000
	Liquid Fuel ≤ 1200° F	120-180 ppm	40 ppm or 0.053 lb/mmBtu	21	0.021	0.0162
			Total:	**4,924**	**4.899**	**3.8000**

Accounting for construction NOx emissions for each year of construction, there will still be a net NOx emission reduction benefit. As already noted, none of the construction emissions for any year are estimated to exceed the construction significance threshold for NOx. Based on the NOx emission reductions anticipated for the proposed project, the overall net air quality effects for NOx emissions during each year of construction activities for the proposed project will not exceed the NOx air quality significance threshold for construction. No other pollutants exceed the air quality significance thresholds during construction or operation. The analysis indicates that there will be an overall reduction in NOx emissions when the construction and operational phases overlap. Thus, there are no significant adverse construction or operational air quality impacts generated by the proposed project. The overall NOx emission reduction benefits are summarized in Table 2-4. Refer to Appendix B for the operation estimates for installing ultra-low NOx burners on the affected equipment.

Table 2-4
Overall [1] Net NOx Emission Reductions During Peak Daily "Worst-Case" Construction Activities with Operational Overlap (lbs/day)

Daily NOx Emission Reductions	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***	***2021***	***2022***
Asphalt Operations (71)	-30.4	-30.4	-30.4	-5.0	-5.0	-2.6	-2.6	-2.6	-0.174	-0.174	-0.174	-0.174	-0.174

Table 2-4 (Continued)
Overall [1] Net NOx Emission Reductions During Peak Daily "Worst-Case" Construction Activities with Operational Overlap (lbs/day)

Daily NOx Emission Reductions	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***	***2021***	***2022***
Open Heated Tank or Evaporator (200)	-85	-85	-85	-14.2	-14.2	-7.3	-7.3	-7.3	-0.486	-0.486	-0.486	-0.486	-0.486
Degassing, Incinerator or Soil Remediation > 1200° F (480)	-204.8	-204.8	-204.8	-34.2	-34.2	-17.54	-17.54	-17.54	-1.17	-1.17	-1.17	-1.17	-1.17
Fryer (101)	-42.8	-42.8	-42.8	-7.2	-7.2	-3.68	-3.68	-3.68	-0.244	-0.244	-0.244	-0.244	-0.244
Metal Heat Treating (136)	-57.8	-57.8	-57.8	-9.6	-9.6	-4.96	-4.96	-4.96	-0.33	-0.33	-0.33	-0.33	-0.33
Metal Melting Furnace (118)	-50.2	-50.2	-50.2	-8.4	-8.4	-4.3	-4.3	-4.3	-0.286	-0.286	-0.286	-0.286	-0.286
Metal or Tar Pot (237)	-101.8	-101.8	-101.8	-17.0	-17.0	-8.72	-8.72	-8.72	-0.582	-0.582	-0.582	-0.582	-0.582
Other > 1200° F (295)	-125.8	-125.8	-125.8	-21.0	-21.0	-10.78	-10.78	-10.78	-0.718	-0.718	-0.718	-0.718	-0.718
Oven, Dehydrator, Dryer, Heater, etc. ≤ 800° F (2335)	-995.8	-995.8	-995.8	-166.0	-166.0	-85.36	-85.36	-85.36	-5.69	-5.69	-5.69	-5.69	-5.69
Degassing, Incinerator or Soil Remediation ≤ 1200° F (479)	-204.4	-204.4	-204.4	-34.0	-34.0	-17.52	-17.52	-17.52	-1.168	-1.168	-1.168	-1.168	-1.168
Make Up Air Heater (34)	-1.44	-1.44	-1.44	-2.4	-2.4	-1.24	-1.24	-1.24	-0.082	-0.082	-0.082	-0.082	-0.082
Oven, Dehydrator, Dryer, Heater, etc. > 800° and ≤ 1200° F (161)	-68.8	-68.8	-68.8	-11.4	-11.4	-5.9	-5.9	-5.9	-0.392	-0.392	-0.392	-0.392	-0.392
Tenter Frame or Carpet Dryer (45)	-19.2	-19.2	-19.2	-3.2	-3.2	-1.64	-1.64	-1.64	-0.11	-0.11	-0.11	-0.11	-0.11

Table 2-4 (Concluded)
Overall [1] Net NOx Emission Reductions During Peak Daily "Worst-Case" Construction Activities with Operational Overlap (lbs/day)

Daily NOx Emission Reductions	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***	***2021***	***2022***
Other Air Heater Outside Building (15)	-6.4	-6.4	-6.4	-1.0	-1.0	-0.54	-0.54	-0.54	-0.036	-0.036	-0.036	-0.036	-0.036
Other with Process Temperature < 1200° F (196)	-83.4	-83.4	-83.4	-14.0	-14.0	-7.16	-7.16	-7.16	-0.478	-0.478	-0.478	-0.478	-0.478
Liquid Fuel > 1200° F (0)	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
Liquid Fuel ≤ 1200°F (21)	-9.0	-9.0	-9.0	-1.4	-1.4	-0.76	-0.76	-0.76	-0.052	-0.052	-0.052	-0.052	-0.052
Accumulated Total NOx Emission Reductions	**-2100**	**-2100**	**-2100**	**-350**	**-350**	**-180**	**-180**	**-180**	**-12**	**-12**	**-12**	**-12**	**-12**
[2]Worst Case Daily NOx Increases during Construction of Ultra-Low NOx Burners	6.90	6.90	6.90	6.90	6.90	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.94
Net Accumulated NOx Emission Reductions (Increase) after Construction	**-2093.1**	**-2093.1**	**-2093.1**	**-343.1**	**-343.1**	**-174.06**	**-174.06**	**-174.06**	**-6.06**	**-6.06**	**-6.06**	**-6.06**	**-6.06**
NOx Significance Threshold (For Construction Activities)	100	100	100	100	100	100	100	100	100	100	100	100	100
Significant For NOx?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

[1] Because NOx emission reductions are permanent, they accumulate each compliance date milestone until total NOx emissions are realized.
[2] Based on worst-case construction scenario of the replacement of 10 units in one day.
[*] A minus sign denotes emission reductions.

Summary of Global Warming Impacts

Significant changes in global climate patterns have recently been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, attributed to accumulation of GHG emissions in the atmosphere. GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The emission of GHGs through the combustion of fossil fuels (i.e., fuels containing carbon) in conjunction with other human activities, appears to be closely associated with global warming. State law defines GHG to include the following: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) (Health and Safety Code §38505(g)). The most common GHG that results from human activity is CO_2, followed by CH_4 and N_2O. The combustion processes affected by the proposed project will generate GHG emissions, primarily CO_2 and CH_4, which are evaluated in the following section. The following analysis focuses on directly emitted CO_2 and CH_4 because these are the primary GHG pollutants emitted during the combustion process and are the GHG pollutants for which emission factors are available. Other GHGs cannot be analyzed at this time because emission factors are not currently available. The remaining GHGs, such as HFCs and PFCs, are determined to not result from the proposed project, and therefore, will not have an effect on the proposed project. CO_2 and CH_4 emissions were estimated using emission factors from CARB EMFAC2007 and Offroad2007 models and EPA's AP-42.

The analysis of GHGs is a much different analysis than the analysis of criteria pollutants for the following reasons. For criteria pollutants, the significance thresholds are based on daily emissions because attainment or non-attainment is based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects on human health, e.g., one-hour and eight-hour standards. Since the half-life of CO2 is approximately 100 years, for example, the effects of GHGs occur over a longer term which means they affect the global climate over a relatively long time frame. As a result, the SCAQMD's current position is to evaluate the effects of GHGs over a longer timeframe than a single day. Although GHG emissions are typically considered to be cumulative impacts because they contribute to global climate effects, this final EA analyzes the GHG emissions as project specific impacts because of the close relationship between CO and CO2 emissions from the compliance options.

Based on the type and size of equipment affected by PR 1147, CO2 emissions from the operation of the retrofitted or replaced equipment are likely to decrease from current levels due to improved burner efficiency. Therefore, no fuel penalty is associated with PR 1147 and CO2 emissions were not required to be evaluated for operational activities. However, there are construction emissions of criteria pollutants and GHGs associated with installing ultra-low NOx burners. Table 2-5 summarizes the CO2 impacts from construction activities. Refer to Appendix B for the GHG estimates for installing ultra-low NOx burners on the affected equipment.

Table 2-5
Overall CO2 Equivalent (eq) Increases Due to Construction Activities (metric tons/year)[1]

Annual CO2eq Emission Increases Due to:	Compliance Years	
	2010-2014	*2015-2023*
Installing Ultra-Low NOx Burners on 2,462 Gaseous Units > 1lb/day	424.13	0
Installing Ultra-Low NOx Burners on 2,462 Gaseous Units ≤ 1lb/day	0	433.59
CO2eq Increases (metric tons/year)	**424.13**	**433.59**

[1] 1 metric ton = 2,205 pounds

Neither SCAQMD nor any other air regulatory agency in California has formally established a significance threshold for GHG emissions yet. In the absence of a specific significance threshold, SCAQMD staff has evaluated significance for projects where it is the lead agency on a case-by-case basis. In this analysis, SCAQMD staff has used a variety of benchmarks to evaluate GHG impacts. As additional information is compiled with regard to the level of GHG emissions that constitute a significant cumulative climate change impact, SCAQMD will continue to revisit and possibly revise the level of GHG emissions considered to be significant.

In its *CEQA & Climate Change* document (January, 2008), the California Air Pollution Control Officers Association (CAPCOA) identifies many potential GHG significance threshold options. The CAPCOA document indicates that establishing quantitative thresholds is a balance between setting the level low enough to capture a substantial portion of future residential and non-residential development, while also setting a threshold high enough to exclude small development projects that will contribute a relatively small fraction of the cumulative statewide GHG emissions. For example, CAPCOA identifies one potential significance threshold as 10,000 metric tons per year, which was considered by the Market Advisory Committee for inclusion in a Greenhouse Gas Cap and Trade System in California. Another potential threshold identified by CAPCOA is 25,000 metric tons per year, which is CARB's proposed mandatory reporting threshold under Assembly Bill (AB) 32. As shown in Table 2-5, GHG emissions increases from implementing PR 1147 would be orders of magnitude lower than both of these reporting thresholds.

Finally, another approach to determining significance is to estimate what percentage of the total inventory of GHG emissions are represented by emissions from a single project. If emissions are a relatively small percentage of the total inventory, it is possible that the project will have little or no effect on global climate change. According to available information, the statewide inventory of CO2 equivalent (CO2eq.) emissions is as follows: 1990 GHG emissions equal 427 million metric tons of CO2eq. and 2020 GHG emissions equal 600 million metric tons of CO2eq. with business as usual (542 metric tons per year by 2010 and 571 metric tons per year by 2015 extrapolating known data).

The CO2 emission increase from PR 1147 construction activities would be approximately 424.13 metric tons of CO2 between 2010 and 2014 and 433.59 metric tons of CO2 between 2015 and 2023. This small percentage (0.000002 percent) of GHG emissions from PR 1147 construction activities as compared to the total projected statewide GHG emissions inventory is another basis

for the SCAQMD's conclusion that GHG emissions from implementing PR 1147 are less than significant.

PR 1147 is part of a comprehensive ongoing regulatory program that includes implementing related SCAQMD 2007 AQMP control measures as amended or new rules to attain and maintain with a margin of safety all state and national ambient air quality standards for all areas within its jurisdiction. The 2007 AQMP estimates a CO2 reduction of 427,849 metric tons per year by 2014, and a CO2 reduction of 1,523,445 metric tons per year by 2020. Therefore, PR 1147 in connection with other 2007 AQMP control measures is not considered to be cumulatively considerable and, therefore, is not considered to be a significant cumulative GHG impact.

Since GHG emissions are considered cumulative impacts, and the GHG emission increases from PR 1147 construction activities are considerably below the 10,000 metric ton per year Market Advisory Committee threshold, 25,000 metric ton per year CARB proposed mandatory reporting threshold under AB 32, a small percentage of the total statewide GHG inventory, and, with other control measures in the 2007 AQMP, which is a comprehensive ongoing regulatory program that would reduce overall CO2 emissions; adverse cumulative GHG impacts from PR 1147 are not considered significant.

Conclusion
Based on the preceding discussion, PR 1147 is expected to reduce NOx emissions by approximately 3.5 tons per day by 2014, which is an air quality benefit. An additional 0.30 ton per day of NOx emissions will be reduced by 2023. Thus, PR 1147 is not expected to result in significant adverse air quality impacts. Further, implementing PR 1147 would not diminish an existing air quality rule or future compliance requirement, nor conflict with or obstruct implementation of the applicable air quality plan. The proposed project has no provision that would cause a violation of any air quality standard or directly contribute to an existing or projected air quality violation. Since air quality impacts from implementing PR 1147 are seen as benefits and do not exceed any of the air quality significance thresholds in Table 2-1, air quality impacts are not considered to be cumulatively considerable as defined in CEQA Guidelines §15065(c). Therefore, the proposed project is not expected to result in a cumulatively considerable net increase of any criteria pollutant.

III.d) Affected facilities are not expected to increase exposure by sensitive receptors to substantial pollutant concentrations from the implementation of PR 1147 for the following reasons: 1) the affected facilities are existing facilities located in industrial or commercial areas; 2) the limited emission increases associated with the proposed changes (equipment replacement or retrofitting existing equipment) are concluded to be less than significant; and, 3) installation of any new, or retrofits of any existing equipment subject to PR 1147 is expected to reduce NOx emissions from affected equipment. Therefore, significant adverse air quality impacts to sensitive receptors are not expected from implementing PR 1147.

III.e) Historically, the SCAQMD has enforced odor nuisance complaints through SCAQMD Rule 402 - Nuisance. Affected facilities are not expected to create objectionable odors affecting a substantial number of people for the following reasons: 1) the affected facilities are existing facilities located in industrial or commercial areas with appropriate controls in place; 2) no heavy-duty construction equipment with associated diesel exhaust odors are necessary to install ultra-low NOx burners; 3) typically no odors are associated with combustion equipment operating in accordance with Rule 1147; and, 4) installation of any new or retrofits of any

existing equipment subject to PR 1147 is expected to reduce NOx emissions from affected equipment. Therefore, no significant odor impacts are expected to result from implementing the PR 1147.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
IV.	**BIOLOGICAL RESOURCES.** Would the project:			
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☑
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☑
c)	Have a substantial adverse effect on federally protected wetlands as defined by §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☑
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☑
e)	Conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☑

		Potentially Significant Impact	Less Than Significant Impact	No Impact
f)	Conflict with the provisions of an adopted Habitat Conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☑

Significance Criteria

Impacts on biological resources will be considered significant if any of the following criteria apply:

- The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.
- The project interferes substantially with the movement of any resident or migratory wildlife species.
- The project adversely affects aquatic communities through construction or operation of the project.

Discussion

IV.a), b), c), & d) PR 1147 would only affect combustion equipment located at existing facilities in industrial or commercial areas, which have already been greatly disturbed. Compliance with PR 1147 means either installing new compliant units or retrofitting existing units with ultra-low NOx burner technology. Therefore, installing new equipment units or retrofitting existing units to comply with PR 1147 would not result in any new construction of buildings or other structures. In general, the areas where affected equipment are located currently do not typically support riparian habitat, federally protected wetlands, or migratory corridors. Additionally, special status plants, animals, or natural communities are not expected to be found in close proximity to the affected facilities.

IV.e) & f) PR 1147 is not envisioned to conflict with local policies or ordinances protecting biological resources nor local, regional, or state conservation plans because it will only affect combustion equipment primarily located at existing facilities in industrial or commercial areas. Additionally, PR 1147 will not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan for the same reason.

The SCAQMD, as the Lead Agency for the proposed project, has found that, when considering the record as a whole, there is no evidence that the proposed project will have potential for any new adverse effects on wildlife resources or the habitat upon which wildlife depends. Accordingly, based upon the preceding information, the SCAQMD has, on the basis of substantial evidence, rebutted the presumption of adverse effect contained in §753.5 (d), Title 14 of the California Code of Regulations.

Based upon these considerations, significant adverse biological resources impacts are not anticipated and will not be further analyzed in this final EA. Since no significant adverse biological resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES. Would the project:			
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☑
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	☐	☐	☑
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☑
d) Disturb any human remains, including those interred outside a formal cemeteries?	☐	☐	☑

Significance Criteria

Impacts to cultural resources will be considered significant if:

- The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group.
- Unique paleontological resources are present that could be disturbed by construction of the proposed project.
- The project would disturb human remains.

Discussion

V.a), b), c), & d) Since only minor construction-related activities associated with installing compliant equipment at affected facilities are expected, the implementation of PR 1147 is expected, so no impacts to historical resources are expected to occur as a result of this project. PR 1147 is not expected to require physical changes to the environment, which may disturb paleontological or archaeological resources. Furthermore, it is envisioned that the areas where the affected facilities exist are already either devoid of significant cultural resources or whose cultural resources have been previously disturbed.

Based upon these considerations, significant adverse cultural resources impacts are not expected from the implementing PR 1147 and will not be further assessed in this final EA. Since no significant cultural resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
VI. ENERGY. Would the project:			
a) Conflict with adopted energy conservation plans?	☐	☐	☑
b) Result in the need for new or substantially altered power or natural gas utility systems?	☐	☐	☑
c) Create any significant effects on local or regional energy supplies and on requirements for additional energy?	☐	☐	☑
d) Create any significant effects on peak and base period demands for electricity and other forms of energy?	☐	☐	☑
e) Comply with existing energy standards?	☐	☐	☑

Significance Criteria

Impacts to energy and mineral resources will be considered significant if any of the following criteria are met:

- The project conflicts with adopted energy conservation plans or standards.
- The project results in substantial depletion of existing energy resource supplies.
- An increase in demand for utilities impacts the current capacities of the electric and natural gas utilities.
- The project uses non-renewable resources in a wasteful and/or inefficient manner.

Discussion

VI.a) & e) PR 1147 would only affect equipment and processes that are required to have an SCAQMD permit to operate, but whose NOx emissions are not currently regulated by SCAQMD Regulation XI. Compliance with PR 1147 means either installing new compliant units or retrofitting existing units with ultra-low NOx burner technology. Installation of new ultra-low NOx burners or replacing existing equipment with new compliant equipment is expected to result in a slight reduction in demand for natural gas, as new burners or new construction is expected to be more efficient than existing affected equipment. As a result, PR 1147 would not conflict with energy conservation plans, use non-renewable resources in a wasteful manner, or result in the need for new or substantially altered power or natural gas systems. Since PR 1147 would affect primarily existing equipment operating at existing facilities, it will not conflict with adopted energy conservation plans because existing facilities would be expected to continue implementing any existing energy conservation plans, because it is expected that compliant equipment will be more efficient than existing equipment. Additionally, operators of affected facilities are expected to comply with existing energy conservation plans and standards to minimize operating costs, while still complying with the requirements of PR 1147. Accordingly these impact issues will not be further analyzed in the final EA.

VI.b), c), & d) PR 1147 would not create any significant effects on peak and base period demands for electricity and other forms of energy since no construction of buildings or other

structures are anticipated as a result of the affected facilities operating equipment that is either manufactured or retrofitted with ultra-low NOx burner technology.

The majority of the universe of sources that would be regulated by PR 1147 is fired with natural gas. As discussed in the air quality section regarding GHG emissions, due to ultra-low NOx burner retrofits, implementation of PR 1147 is expected to result in a slight decrease in the demand for natural gas. Based upon these considerations, the proposed project is not expected to use energy in a wasteful manner, and will not exceed SCAQMD energy significance thresholds. There will be no substantial depletion of energy resources nor will significant amounts of fuel be needed when compared to existing supplies.

In light of the preceding discussion, PR 1147 would not create any significant effects on peak and base period demands for electricity and other forms of energy and it is expected to comply with existing energy standards. Therefore, PR 1147 is not expected to generate significant adverse energy resources impacts and will not be discussed further in this final EA. Since no significant energy impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
VII.	**GEOLOGY AND SOILS.** Would the project:			
a)	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☑
	• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☑
	• Strong seismic ground shaking?	☐	☐	☑
	• Seismic–related ground failure, including liquefaction?	☐	☐	☑
	• Landslides?	☐	☐	☑
b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑
c)	Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☑
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☑

	Potentially Significant Impact	Less Than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☑

Significance Criteria

Impacts on the geological environment will be considered significant if any of the following criteria apply:

- Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction or over covering of large amounts of soil.
- Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.
- Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction or landslides.
- Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.
- Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

Discussion

VII.a) Southern California is an area of known seismic activity. Structures must be designed to comply with the Uniform Building Code Zone 4 requirements if they are located in a seismically active area. The local city or county is responsible for assuring that a proposed project complies with the Uniform Building Code as part of the issuance of the building permits and can conduct inspections to ensure compliance. The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The goal of the code is to provide structures that will: 1) resist minor earthquakes without damage; 2) resist moderate earthquakes without structural damage but with some non-structural damage; and 3) resist major earthquakes without collapse but with some structural and non-structural damage.

The Uniform Building Code bases seismic design on minimum lateral seismic forces ("ground shaking"). The Uniform Building Code requirements operate on the principle that providing appropriate foundations, among other aspects, helps to protect buildings from failure during earthquakes. The basic formulas used for the Uniform Building Code seismic design require determination of the seismic zone and site coefficient, which represent the foundation conditions at the site. Accordingly, buildings and equipment at existing affected facilities are likely to conform with the Uniform Building Code and all other applicable state codes in effect at the time they were constructed.

PR 1147 would only affect combustion equipment located primarily at existing facilities in industrial or commercial areas. Since implementing PR 1147 is expected to involve the installation of new compliant equipment or the retrofitting of existing units with ultra-low NOx burners at existing facilities, no new buildings or structures are expected to be constructed in response to the proposed project. As a result, substantial exposure of people or structure to the

risk of loss, injury, or death involving seismic-related activities is not anticipated and will not be further analyzed in this final EA.

VII.b) PR 1147 would only affect combustion equipment located at existing facilities in industrial or commercial areas. Since implementing PR 1147 is expected to involve the installation of new compliant equipment at the end of the equipment's useful life or the retrofitting of existing units with ultra-low NOx burners at existing facilities, no soil disruption from excavation, grading, or filling activities; changes in topography or surface relief features; erosion of beach sand; or changes in existing siltation rates are anticipated in response to the proposed project.

VII.c) Since PR 1147 would only affect combustion equipment located primarily at existing facilities, it is expected that the soil types present at the affected facilities will not be further susceptible to expansion or liquefaction. Subsidence is not anticipated to be a problem since no excavation, grading, or filling activities will occur at affected facilities. Further, the proposed project does not involve drilling or removal of underground products (e.g., water, crude oil, et cetera) that could produce new, or make worse existing subsidence effects. Additionally, the affected areas are not envisioned to be prone to new risks from landslides or have unique geologic features since the affected facilities are located in industrial or commercial areas where such features have already been altered or removed. Finally, since affected equipment are located at existing facilities, the proposed project is not expected to alter or make worse any existing potential for subsidence, liquefaction, etc.

VII.d) & e) Since the proposed project will affect operations at primarily existing facilities, it is expected that people or property will not be exposed to new impacts relative to expansive soils or soils incapable of supporting water disposal, nor will any existing impacts be made worse. Further, the proposed project does not require installation of septic tanks or other alternative waste water systems. The main effect of the proposed project will be the installation of new compliant equipment or the retrofitting of existing units with ultra-low NOx burners at the affected facilities.

Based upon these considerations, significant geology and soils impacts are not expected from the implementation of PR 1147 and will not be further analyzed in this final EA. Since no significant geology and soils impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:			
a) Create a significant hazard to the public or the environment through the routine transport, use, disposal of hazardous materials?	☐	☐	☑
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☑
c) Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☑
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment?	☐	☐	☑
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☑
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☑
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☑
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☑
i) Significantly increased fire hazard in areas with flammable materials?	☐	☐	☑

Significance Criteria
Impacts associated with hazards will be considered significant if any of the following occur:

- Non-compliance with any applicable design code or regulation.
- Non-conformance to National Fire Protection Association standards.
- Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.
- Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

Discussion
VIII.a) There are no provisions in PR 1147 that would increase the amount of hazardous materials used or generated by facility owners/operators. Further, because implementation of PR 1147 would involve the installation of new compliant equipment at the end of the equipment's useful life or the retrofitting of existing units with ultra-low NOx burners at existing facilities, no raw material deliveries or waste disposal truck trips that handle hazardous materials will be associated with the proposed project after the applicable compliance dates.

As indicated in the discussion under energy, PR 1147 applies to combustion equipment operations that are mainly fired with natural gas, though a small percentage are fired with liquid fuel; both are flammable substances. Because the ultra-low NOx burner technology is more efficient than existing burner technologies, implementation of PR 1147 is expected to slightly reduce the demand for fuel compared to what is currently used at existing affected facilities. As a result, implementation of PR 1147 is not expected to noticeably change or may slightly reduce any existing flammability hazard that may be associated with operating these combustion devices. In summary, implementation of PR 1147 is not expected to increase any existing flammability hazard associated with firing ultra-low NOx burners.

VIII.b) & i) Since PR 1147 would primarily affect existing combustion equipment that is primarily located at existing facilities, existing emergency planning is anticipated to adequately minimize the risk associated installing new compliant equipment or retrofitting existing equipment with ultra-low NOx burners. Businesses are required to report increases in the storage or use of flammable and otherwise hazardous materials to local fire departments. As noted in item VIII.a), PR 1147 is not expected to increase the amount of materials used or generated at affected facilities that would contain hazardous materials nor is it expected to significantly increase the demand of fuels (natural gas and liquid fuel) or other flammable substances.

In addition, local fire departments ensure that adequate permit conditions are in place to protect against potential risk of upset. The Uniform Fire Code and Uniform Building Code set standards intended to minimize risks from flammable or otherwise hazardous materials. Local jurisdictions are required to adopt the uniform codes or comparable regulations. Local fire agencies require permits for the use or storage of hazardous materials and permit modifications for proposed increases in their use. Permit conditions depend on the type and quantity of the hazardous materials at the facility. Permit conditions may include, but are not limited to, specifications for sprinkler systems, electrical systems, ventilation, and containment. The fire

departments make annual business inspections to ensure compliance with permit conditions and other appropriate regulations.

Further, all hazardous materials are expected to be used in compliance with established OSHA or Cal/OSHA regulations and procedures, including providing adequate ventilation, using recommended personal protective equipment and clothing, posting appropriate signs and warnings, and providing adequate worker health and safety training. When taken together, the above regulations provide comprehensive measures to reduce hazards of explosive or otherwise hazardous materials. Compliance with these and other federal, state and local regulations and proper operation and maintenance of equipment should ensure the potential for explosions or accidental releases of hazardous materials is not significant.

VIII.c), e), & f) In general, the purpose of PR 1147 is to achieve NOx emission reductions from large variety of combustion equipment at existing facilities, which will ultimately improve air quality and reduce adverse human health impact related to poor air quality. Since operations of these equipment categories occur primarily at existing facilities located in industrial or commercial areas, implementation of PR 1147 is not expected to increase existing, or create any new hazardous emissions which would adversely affect existing/proposed schools or public/private airports located in close proximity to the affected facilities. Accordingly, these impact issues are not further evaluated in this final EA.

VIII.d) Even if some affected facilities are designated pursuant to Government Code §65962.5 as a large quantity generator of hazardous waste, it is not anticipated that complying with PR 1147 will alter in any way how operators of affected facilities manage their hazardous wastes and that they will continue to be managed in accordance with all applicable federal, state, and local rules and regulations.

VIII.g) Aside from the use of natural gas and liquid fuel for fueling the equipment, it should again be noted that the proposed rule has no provisions that dictate the use of, or generate any new hazardous material. Under PR 1147, owners or operators of the affected facilities have the flexibility of choosing the type of compliant combustion equipment (i.e. to install new equipment or retrofit existing equipment with ultra-low NOx burners) for their operations. Either way, the installation of new compliant equipment or the retrofit of existing equipment will not pose a substantial safety hazard. Therefore, it is not anticipated that PR 1147 would require changes to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

In addition, Health and Safety Code §25506 specifically requires all businesses handling hazardous materials to submit a business emergency response plan to assist local administering agencies in the emergency release or threatened release of a hazardous material. Business emergency response plans generally require the following:

- Identification of individuals who are responsible for various actions, including reporting, assisting emergency response personnel and establishing an emergency response team;
- Procedures to notify the administering agency, the appropriate local emergency rescue personnel, and the California Office of Emergency Services;

- Procedures to mitigate a release or threatened release to minimize any potential harm or damage to persons, property or the environment;
- Procedures to notify the necessary persons who can respond to an emergency within the facility;
- Details of evacuation plans and procedures;
- Descriptions of the emergency equipment available in the facility;
- Identification of local emergency medical assistance; and
- Training (initial and refresher) programs for employees in:
    1. The safe handling of hazardous materials used by the business;
    2. Methods of working with the local public emergency response agencies;
    3. The use of emergency response resources under control of the handler;
    4. Other procedures and resources that will increase public safety and prevent or mitigate a release of hazardous materials.

In general, every county or city and all facilities using a minimum amount of hazardous materials are required to formulate detailed contingency plans to eliminate, or at least minimize, the possibility and effect of fires, explosion, or spills. In conjunction with the California Office of Emergency Services, local jurisdictions have enacted ordinances that set standards for area and business emergency response plans. These requirements include immediate notification, mitigation of an actual or threatened release of a hazardous material, and evacuation of the emergency area.

VIII.h) Since the facilities that operate equipment subject to the requirements in PR 1147 are located at existing industrial or commercial sites in urban areas where wildlands are not prevalent, risk of loss or injury associated with wildland fires is not expected. Accordingly, this impact issue is not further evaluated in this final EA.

Based upon these considerations, significant hazards and hazardous materials impacts are not expected from the implementation of PR 1147 and will not be further analyzed in this final EA. Since no significant hazards and hazardous materials impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	**Less Than Significant Impact**	**No Impact**
IX. HYDROLOGY AND WATER QUALITY. Would the project:			
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☑

	Potentially Significant Impact	Less Than Significant Impact	No Impact
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☑
c) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or offsite?	☐	☐	☑
d) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite?	☐	☐	☑
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☑
f) Otherwise substantially degrade water quality?	☐	☐	☑
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☑
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flaws?	☐	☐	☑
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☑
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☑
k) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☑

	Potentially Significant Impact	Less Than Significant Impact	No Impact
l) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☑
m) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☑
n) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☑
o) Require in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☑

Significance Criteria
Potential impacts on water resources will be considered significant if any of the following criteria apply:

Water Quality:

- The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.
- The project will cause the degradation of surface water substantially affecting current or future uses.
- The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.
- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

Water Demand:

- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use a substantial amount of potable water.
- The project increases demand for water by more than five million gallons per day.

Discussion

The expected options for compliance with the proposed future NOx emission limits will either involve the installation of new compliant equipment at the end of the equipment's useful life or the retrofitting of existing units with ultra-low NOx burners at existing facilities. No additional water demand or wastewater generation is expected to result from the operation of the units equipped with ultra-low NOx burners at the affected facilities because this type of control technology does not entail the use of water in the NOx control process. Further, PR 1147 has no provision that would require the construction of additional water resource facilities, increase the need for new or expanded water entitlements, or alter existing drainage patterns. The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge. PR 1147 would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Further, since compliance with PR 1147 does not involve wastewater processes, there would be no change in the composition or volume of existing wastewater streams from the affected facilities. In addition, the proposed amended rule is not expected to require additional wastewater disposal capacity, violate any water quality standard or wastewater discharge requirements, or otherwise substantially degrade water quality.

IX.a), f), k), l), & o) Complying with the proposed project will not change existing operations at affected facilities, nor would it result in generation of increased volumes of wastewater because the ultra-low NOx burners do not require water as part of the NOx control process. As a result, there are no potential changes in wastewater volume or composition expected from facilities complying with the requirements in PR 1147. Further, PR 1147 is not expected to cause affected facilities to violate any water quality standard or wastewater discharge requirements since there would be no wastewater volumes generated as a result of implementing with PR 1147. PR 1147 is not expected to have significant adverse water demand or water quality impacts for the following reasons:

- The proposed project does not increase demand for water by more than 5,000,000 gallons per day.
- The proposed project does not require construction of new water conveyance infrastructure.
- The proposed project does not create a substantial increase in mass inflow of effluents to public wastewater treatment facilities.
- The proposed project does not result in a substantial degradation of surface water or groundwater quality.
- The proposed project does not result in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The proposed project does not result in alterations to the course or flow of floodwaters.

IX.b) & n) Because the NOx control process of the burners in the equipment affected by PR 1147 does not rely on water, no increase to any affected facilities' existing water demand is expected. Because ultra-low NOx burner technology does not utilize water, implementation of PR 1147 will not increase demand for, or otherwise affect groundwater supplies or interfere with

groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. In addition, implementation of PR 1147 will not increase demand for water from existing entitlements and resources, and will not require new or expanded entitlements. Since equipment affected by PR 1147 generally occur in existing structures at existing facilities, no paving is required that might interfere with groundwater recharge. Therefore, no water demand impacts are expected as the result of implementing PR 1147.

IX.c), d), & e) Implementation of PR 1147 will occur at existing facilities, that are typically located in industrial or commercial areas that are paved and already have drainage infrastructures in place. Since PR 1147 does not involve major construction activities including site preparation, grading, etc., no changes to storm water runoff, drainage patterns, groundwater characteristics, or flow are expected. Therefore, these impact areas are not expected to be affected by PR 1147.

IX.g), h), i), & j) The proposed project will not require construction of new housing, contribute to the construction of new building structures, or require modifications or changes to existing structures. Further, PR 1147 is not expected to require additional workers at affected facilities. Therefore, PR 1147 is not expected to generate construction of any new structures in 100-year flood areas as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood delineation map. As a result, PR 1147 is not expected to expose people or structures to significant new flooding risks, or make worse any existing flooding risks. Finally, PR 1147 will not affect in any way any potential flood hazards inundation by seiche, tsunami, or mud flow that may already exist relative to existing facilities or create new hazards at existing facilities.

IX.m) PR 1147 will not increase storm water discharge, since no construction activities are expected at affected facilities. Further, no new areas at existing affected facilities are expected to be paved, so the proposed project will not increase storm water runoff during operation. Therefore, no new storm water discharge treatment facilities or modifications to existing facilities will be required due to the implementation of PR 1147. Accordingly, PR 1147 is not expected to generate significant adverse impacts relative to construction of new storm water drainage facilities.

Based upon these considerations, significant hydrology and water quality impacts are not expected from the implementation of PR 1147 and will not be further analyzed in this final EA. Since no significant hydrology and water quality impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	**Less Than Significant Impact**	**No Impact**
X. LAND USE AND PLANNING. Would the project:			
a) Physically divide an established community?	☐	☐	☑

		Potentially Significant Impact	Less Than Significant Impact	No Impact
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☑
c)	Conflict with any applicable habitat conservation or natural community conservation plan?	☐	☐	☑

Significance Criteria

Land use and planning impacts will be considered significant if the project conflicts with the land use and zoning designations established by local jurisdictions.

Discussion

X.a) PR 1147 would only affect combustion equipment primarily at existing facilities. The expected options for compliance with the proposed future NOx emission limits in PR 1147 will involve the installation of new compliant equipment at the end of the equipment's useful life or the retrofitting of existing units with ultra-low NOx burners. Since PR 1147 affects equipment operating at existing facilities, it does not include any components that would require physically dividing an established community.

X.b) & c) There are no provisions in PR 1147 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements will be altered by regulating NOx emissions from affected natural gas-fired or liquid fuel fired combustion equipment. Replacing one type of combustion equipment with another similar type of combustion equipment or replacing old burners with new ultra-low NOx burners is not considered a change in operations at affected facilities that would require changes to an existing conditional use permit. Since PR 1147 would establish lower NOx emission limits for these combustion devices, PR 1147 would not affect in any way habitat conservation or natural community conservation plans, agricultural resources or operations, and would not create divisions in any existing communities. Therefore, present or planned land uses in the region will not be significantly adversely affected as a result of PR 1147.

Based upon these considerations, significant land use and planning impacts are not expected from the implementation of PR 1147 and will not be further analyzed in this final EA. Since no significant land use and planning impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XI. MINERAL RESOURCES. Would the project:			
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☑
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☑

Significance Criteria

Project-related impacts on mineral resources will be considered significant if any of the following conditions are met:

- The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Discussion

XI.a) & b) There are no provisions in PR 1147 that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Based upon these aforementioned considerations, significant mineral resources impacts are not expected from the implementation of PR 1147 and will not be further analyzed in this final EA. Since no significant mineral resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XII. NOISE. Would the project result in:			
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☑
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☑
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☑

	Potentially Significant Impact	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☑
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☑
f) For a project within the vicinity of a private airship, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☑

Significance Criteria

Impacts on noise will be considered significant if:

- Construction noise levels exceed the local noise ordinances or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers.
- The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

Discussion

XII.a) PR 1147 would only affect combustion equipment at existing facilities. Since installation of new equipment or retrofitting existing equipment does not require heavy-duty construction equipment, significant adverse noise impacts are not anticipated during the construction phase. The expected options for compliance with the proposed future NOx emission limits in PR 1147 will involve either the installation of new equipment at the end of the equipment's useful life or the retrofitting of existing units with ultra-low NOx burners. No other physical modifications or changes associated with the implementation of PR 1147 are expected. Thus, the proposed project is not expected to expose persons to the generation of excessive noise levels above current facility levels because the proposed project will result in affected facilities operating the same type of equipment at equivalent or similar noise levels and low NOx combustion technology is not typically a noise intensive technology. It is expected that any facility affected by PR 1147 will comply with all existing noise control laws or ordinances. Further, Occupational Safety and Health Administration (OSHA) and California-OSHA have established noise standards to protect worker health. It is expected that all workers at affected facilities will continue complying with applicable noise standards.

XII.b) PR 1147 is not anticipated to expose people to or generate excessive groundborne vibration or groundborne noise levels since no major construction activities are expected to occur at the existing facilities and the affected equipment are not inherently noisy or create excessive vibrations.

XII.c) A permanent increase in ambient noise levels at the affected facilities above existing levels as a result of implementing the proposed project is unlikely to occur because any new equipment that would be installed as part of implementing PR 1147 will be replacing existing equipment with the same or similar noise profiles and retrofitting existing equipment with ultra-low NOx burners will not change the noise profile of the existing equipment. Therefore, the existing noise levels are unlikely to change and raise ambient noise levels in the vicinities of the existing facilities to above a level of significance in response to implementing PR 1147.

XII.d) No increase in periodic or temporary ambient noise levels in the vicinity of affected facilities above levels existing prior to PR 1147 is anticipated because the proposed project would not require construction-related activities at affected facilities or change the existing operations at the affected facilities. See also the response to item XII.a).

XII.e) & f) Implementation of PR 1147 would not consist of improvements within the existing facilities requiring major construction activities. Even if an affected facility is located near a public/private airport, there are no new noise impacts expected from any of the existing facilities as a result of complying with the proposed project. Thus, PR 1147 is not expected to expose people residing or working in the project vicinities to excessive noise levels. See also the response to item XII.a).

Based upon these considerations, significant noise impacts are not expected from the implementation of PR 1147 and are not further evaluated in this final EA. Since no significant noise impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING. Would the project:			
a) Induce substantial growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?	☐	☐	☑
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☑
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☑

Significance Criteria

Impacts of the proposed project on population and housing will be considered significant if the following criteria are exceeded:

- The demand for temporary or permanent housing exceeds the existing supply.
- The proposed project produces additional population, housing or employment inconsistent with adopted plans either in terms of overall amount or location.

Discussion

XIII.a) Because the installation of new equipment or retrofitting of existing equipment only requires two construction workers at most (one to deliver materials and one to install it), it is expected that construction workers can be drawn from the existing labor pool in southern California. Further, the proposed project is not anticipated to generate any significant effects, either direct or indirect, on the district's population or population distribution as no additional workers are anticipated to be required at facilities subject to the proposed amendments. Human population within the jurisdiction of the SCAQMD is anticipated to grow regardless of implementing PR 1147. As such, PR 1147 will not result in changes in population densities or induce significant growth in population.

XIII.b) & c) Because the proposed project primarily affects existing facilities located mostly in industrial and commercial areas, PR 1147 is not expected to result in the creation of any industry that would affect population growth, directly or indirectly induce the construction of single- or multiple-family units, or require the displacement of people elsewhere.

Based upon these considerations, significant population and housing impacts are not expected from the implementation of PR 1147 and are not further evaluated in this final EA. Since no significant population and housing impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES. Would the proposal result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:			
a) Fire protection?	☐	☐	☑
b) Police protection?	☐	☐	☑
c) Schools?	☐	☐	☑
d) Parks?	☐	☐	☑
e) Other public facilities?	☐	☐	☑

Significance Criteria
Impacts on public services will be considered significant if the project results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives.

Discussion
XIV.a) & b) PR 1147 would only affect combustion equipment at existing facilities. The expected options for compliance with the proposed future NOx emission limits in PR 1147 will involve either the installation of new equipment at the end of the equipment's useful life or the retrofitting of existing units with ultra-low NOx burners that will be compliant with fire department standards. No other physical modifications or changes associated with the implementation of PR 1147 are expected. The overall amount of natural gas and liquid fuel usage at any one facility over their current levels is not expected to change substantially or increase the chances for fires or explosions that could affect local fire departments. Finally, PR 1147 is not expected to increase the need for security at affected facilities, which could adversely affect local police departments.

XIV.c) & d) The local labor pool (e.g., workforce) of particular affected facility areas is expected to remain the same since PR 1147 would not trigger any changes to current facility operations. Therefore, with no increase in local population anticipated, no significant adverse impacts are expected to local schools or parks.

XIV.e) The proposed project will result in replacing existing equipment with functionally identical new equipment at the end of the existing equipment's useful life or retrofitting existing equipment with ultra-low NOx burners at existing facilities. Besides permitting the equipment or altering permit conditions, there is no other need for government services. Implementation of PR 1147 would not result in the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objectives. There will be no increase in population and, therefore, no need for physically altered government facilities.

Based upon these considerations, significant public services impacts are not expected from the implementation of PR 1147 and are not further evaluated in this final EA. Since no significant public services impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XV. RECREATION.			
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☑

	Potentially Significant Impact	Less Than Significant Impact	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☑

Significance Criteria
Impacts to recreation will be considered significant if:

- The project results in an increased demand for neighborhood or regional parks or other recreational facilities.
- The project adversely affects existing recreational opportunities.

Discussion
XV.a) & b) As previously discussed under "Land Use and Planning," there are no provisions in the PR 1147 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements will be altered by the changes proposed in PR 1147. The proposed project would not increase the demand for or use of existing neighborhood and regional parks or other recreational facilities or require the construction of new or expansion of existing recreational facilities that might have an adverse physical effect on the environment because it will not directly or indirectly increase or redistribute population.

Based upon these considerations, significant recreation impacts are not expected from the implementation of PR 1147 and are not further evaluated in this final EA. Since no significant recreation impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XVI. SOLID/HAZARDOUS WASTE. Would the project:			
a)Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☑
b)Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?	☐	☐	☑

Significance Criteria
The proposed project impacts on solid/hazardous waste will be considered significant if the following occurs:

- The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

Discussion

XVI.a) & b) Implementation of PR 1147 would require facility operators to either install new compliant equipment at the end of the equipment's useful life or retrofit existing equipment with ultra-low NOx burners beginning on or after July 1, 2010 through July 1, 2013. The date the lower NOx emission limits become effective as a result of implementing PR 1147 are in addition to other requirements for existing equipment that already comply with a 12 ppm NOx limit. PR 1147 may involve replacing older equipment with newer lower NOx emitting equipment or retrofitting existing equipment with ultra-low NOx burners. Because affected equipment has a finite lifetime, it will ultimately have to be replaced at the end of its useful life. For some equipment, PR 1147 may accelerate replacement. However, affected equipment may be refurbished and used elsewhere or the scrap metal from replaced units has economic value and is expected to be recycled, so any solid or hazardous waste impacts specifically associated with PR 1147 are expected to be minor. As a result, no substantial change in the amount or character of solid or hazardous waste streams is expected to occur. PR 1147 is not expected to increase the volume of solid or hazardous wastes from affected facilities, require additional waste disposal capacity, or generate waste that does not meet applicable local, state, or federal regulations.

Based upon these considerations, PR 1147 is not expected to increase the volume of solid or hazardous wastes that cannot be handled by existing municipal or hazardous waste disposal facilities, or require additional waste disposal capacity. Further, implementing PR 1147 is not expected to interfere with any affected facility's ability to comply with applicable local, state, or federal waste disposal regulations. Since no solid/hazardous waste impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	**Less Than Significant Impact**	**No Impact**
XVII. TRANSPORTATION/TRAFFIC. Would the project:			
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☑
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☑
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☑

	Potentially Significant Impact	Less Than Significant Impact	No Impact
d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	☐	☐	☑
e) Result in inadequate emergency access?	☐	☐	☑
f) Result in inadequate parking capacity?	☐	☐	☑
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	☐	☐	☑

Significance Criteria

Impacts on transportation/traffic will be considered significant if any of the following criteria apply:

- Peak period levels on major arterials are disrupted to a point where level of service (LOS) is reduced to D, E or F for more than one month.
- An intersection's volume to capacity ratio increase by 0.02 (two percent) or more when the LOS is already D, E or F.
- A major roadway is closed to all through traffic, and no alternate route is available.
- There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- The demand for parking facilities is substantially increased.
- Water borne, rail car or air traffic is substantially altered.
- Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.
- The need for more than 350 employees
- An increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round trips per day
- Increase customer traffic by more than 700 visits per day.

Discussion

XVII.a) & b) PR 1147 affects a large variety of combustion equipment operating primarily at existing facilities and has no potential to adversely affect transportation. The expected options for compliance with the proposed future NOx emission limits in PR 1147 will involve the installation of new compliant equipment at the end of the equipment's useful life or the retrofitting of existing units with ultra-low NOx burners, which would only require two construction workers at most to deliver materials and install them. PR 1147 would have no affect on existing operations at the affected facilities that would change or cause additional transportation demands or services. Therefore, since only two additional construction-related trips per facility and no operational-related trips per facility are anticipated, the implementation of PR 1147 is not expected to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near affected facilities. Finally, affected facilities are dispersed throughout the District, so it is not expected that construction-related trips to affected facilities would overlap to an appreciable extent.

XVII.c) The expected options for compliance with the proposed future NOx emission limits in PR 1147 will involve the installation of new compliant equipment or the retrofitting of existing units with ultra-low NOx burners. However, PR 1147 will not require operators of existing facilities to construct buildings or other structures that could interfere with flight patterns so the height and appearance of the existing structures are not expected to change. Therefore, implementation of PR 1147 is not expected to adversely affect air traffic patterns. Further, PR 1147 will not affect in any way air traffic in the region because it will not require transport of any materials by air.

XVII.d) As the physical modifications that are expected to occur by implementing PR 1147 are limited to the confines of existing facilities, no offsite modifications to roadways are anticipated for the proposed project that would result in an additional design hazard or incompatible uses.

XVII.e) Any equipment replacements or retrofits associated with implementing PR 1147 will likely occur in or about the same location within the confines of each existing facility such that no changes to emergency access at or in the vicinity of the affected facilities would be expected. As a result, PR 1147 is not expected to adversely impact emergency access.

XVII.f) Other than the equipment replacements or retrofits associated with implementing PR 1147, no changes to the parking capacity at or in the vicinity of the affected facilities are expected. Further, PR 1147 is not expected to require additional workers (with the exception of retrofitting or equipment replacement), so additional parking capacity will not be required. Therefore, PR 1147 is not expected to adversely impact on- or off-site parking capacity.

XVII.g) Other than the equipment replacements or retrofits associated with implementing PR 1147, no facility modifications or changes are expected that would conflict with alternative transportation, such as bus turnouts, bicycle racks, et cetera.

Based upon these considerations, PR 1147 is not expected to generate significant adverse transportation/traffic impacts and, therefore, this topic will not be considered further. Since no significant transportation/traffic impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.			
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☑

	Potentially Significant Impact	Less Than Significant Impact	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☑
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑

XVIII.a) As discussed in the "Biological Resources" section, PR 1147 is not expected to significantly adversely affect plant or animal species or the habitat on which they rely because the affected equipment is located at primarily existing facilities in industrial or commercial areas which have already been greatly disturbed and that currently do not support such habitats. Additionally, special status plants, animals, or natural communities are not expected to be found within close proximity to the facilities affected by PR 1147.

XVIII.b) Based on the foregoing analyses, since PR 1147 will not generate any project-specific significant environmental impacts, PR 1147 is not expected to cause cumulative impacts in conjunction with other projects that may occur concurrently with or subsequent to the proposed project. Related projects to the currently proposed project include existing and proposed rules and regulations, as well as 2007 AQMP control measures. Furthermore, the effects of PR 1147 will not be "cumulatively considerable" because there are no, or minor, incremental impacts and there will be no contribution to a significant cumulative impact caused by other projects that would exist in absence of the proposed project. For example, the environmental topics checked 'No Impact' (e.g., aesthetics, agriculture resources, biological resources, cultural resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, solid/hazardous waste and transportation and traffic) would not be expected to make any contribution to potential cumulative impacts whatsoever. For the environmental topic checked 'Less than Significant Impact' (e.g., air quality), the analysis indicated that project impacts would not exceed any project-specific significance thresholds. This conclusion is based on the fact that the analyses for each of these environmental areas concluded that there would be no incremental effects of the proposed project would be minor and, therefore, not considered to be cumulatively considerable. Also, in the case of air quality impacts, the net effect of implementing the proposed project with other proposed rules and regulations, and control measures in the 2007 AQMP is an overall reduction in district-wide emissions contributing to the attainment of state and national ambient air quality standards. Therefore, the proposed project has no potential for generating significant adverse cumulative or cumulatively considerable impacts.

XVIII.c) Based on the foregoing analyses, PR 1147 is not expected to cause adverse effects on human beings. Significant air quality impacts are not expected from the implementation of PR

1147. The direct impact from the proposed project, however, is an air quality benefit with an overall average NOx reduction of 3.5 tons per day by 2014, increasing to 3.8 tons per day by 2023. No significant adverse impacts to aesthetics, agriculture resources, biological resources, cultural resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, solid/hazardous waste and transportation and traffic are expected as a result of the implementation of PR 1147.

As discussed in items I through XVIII above, the proposed project has no potential to cause significant adverse environmental effects.

APPENDIX A

PROPOSED RULE 1147

(September 9, 2008)

PROPOSED RULE 1147. NOx REDUCTIONS FROM MISCELLANEOUS SOURCES

(a)Purpose and Applicability

The purpose of this rule is to reduce nitrogen oxide emissions from gaseous and liquid fuel fired combustion equipment as defined in this rule. This rule applies to ovens, dryers, dehydrators, heaters, kilns, calciners, furnaces, heated pots, cookers, roasters, fryers, closed and open heated tanks and evaporators, distillation units, degassing units, incinerators, soil remediation units and other combustion equipment with nitrogen oxide emissions that requires a District permit and is not specifically required to comply with a nitrogen oxide emission limit by other District Regulation XI rules. This rule does not apply to solid fuel fired combustion equipment, internal combustion engines subject to District Rule 1110.2, turbines, charbroilers, or boilers, water heaters, thermal fluid heaters and enclosed process heaters subject to District Rules 1109, 1121, 1146, 1146.1, or 1146.2 and equipment subject to District Rules 1111, 1112, 1117, or 1135. This rule applies to manufacturers, distributors, retailers, refurbishers, installers, owners, operators, and maintenance and repair of units subject to this rule.

(b)Definitions

(1) ANNUAL CAPACITY FACTOR means the ratio of the ANNUAL HEAT INPUT of a unit in a calendar year to the amount of fuel it could have burned if it had operated at the rated heat input capacity for 100 percent of the time during the calendar year.

(2) ANNUAL HEAT INPUT means the actual amount of heat released by fuels burned in a unit during a calendar year, based on the fuel's higher heating value.

(3) BTU means British thermal unit or units.

(4) COMBUSTION MODIFICATION means replacement of a burner(s) or combustion control system(s).

(5) HEATER means any combustion equipment that is fired with gaseous and/or liquid fuels and which transfers heat from combusted fuel to materials or air contained in the unit or in an adjoining cabinet, container or structure. Heater does not include any boiler or PROCESS HEATER designed to transfer heat

to water or process streams that is subject to any NOx emission limits of District Rules 1109, 1146, 1146.1 or 1146.2, and does not include any internal combustion engine or turbine.

(6) HEAT INPUT means the higher heating value of the fuel to the unit measured as BTU per hour.

(7) HEAT OUTPUT means the enthalpy of the working fluid output of the unit.

(8) 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.

(9) NOx EMISSIONS means the sum of nitrogen oxide and nitrogen dioxide in the flue gas, collectively expressed as nitrogen dioxide.

(10) PROCESS HEATER means any equipment that is fired with gaseous and/or liquid fuels and which transfers heat from combusted fuel to water or process streams. PROCESS HEATER does not include any furnace, kiln or oven used for melting, heat treating, annealing, drying, curing, baking, cooking, calcining, or vitrifying; or any unfired waste heat recovery heater that is used to recover sensible heat from the exhaust of any combustion equipment.

(11) PROTOCOL means a South Coast Air Quality Management District approved test protocol for determining compliance with emission limits for applicable equipment.

(12) RATED HEAT INPUT CAPACITY means the gross HEAT INPUT of the combustion UNIT, which shall be specified on a permanent rating plate attached by the manufacturer to the device and supported by required documentation. If the UNIT has been altered or modified such that its gross HEAT INPUT is higher or lower than the rated HEAT INPUT capacity specified on the original manufacturer's permanent rating plate, the new gross HEAT INPUT shall be considered as the rated HEAT INPUT capacity and shall be specified on a permanent supplemental rating plate attached to the device.

(13) RESPONSIBLE OFFICIAL means:

(A) For a corporation: a president or vice-president of the corporation in charge of a principal business function or a duly authorized person who performs similar policy-making functions for the corporation; or

(B) For a partnership or sole proprietorship: general partner or proprietor, respectively.

(14) THERM means 100,000 BTU.

(15) UNIT means any oven, dryer, dehydrator, heater, kiln, calciner, furnace, heated pot, cooker, roaster, fryer, heated tank and evaporator, distillation unit, degassing unit, incinerator, soil remediation units and other combustion equipment with nitrogen oxide emissions requiring a District permit and not specifically required to comply with a NOx emission limit by other District Regulation XI rules. UNIT does not mean any solid fuel fired combustion equipment, internal combustion engine subject to District Rule 1110.2, turbine, charbroiler, or boiler, water heater, thermal fluid heaters or enclosed process heater subject to District Rules 1109, 1121, 1146, 1146.1, or 1146.2 or equipment subject to District Rules 1111, 1112, 1117, or 1135.

(c)Requirements

(1) On or after (date of adoption) any person owning or operating a unit subject to this rule shall not operate the unit in a manner that exceeds the applicable nitrogen oxide emission limit specified in Table 1 at the time a District permit is required for operation of a new, relocated or modified unit or, for in-use units, in accordance with the compliance schedule in Table 2, or at the time of a combustion modification.

Table 1 – NO_x Emission Limit

Equipment Category(ies)	**Gaseous Fuel Limit** (ppm @ 3% O_2, dry) or (lb/mmBtu heat input)
Asphalt Operations	40 ppm
Degassing, Incinerator, or Soil Remediation > 1200° F [1]	60 ppm or 0.073 lb/mmBtu
Fryer	
Heated Open Tank or Evaporator	
Metal Heat Treating	
Metal Melting Furnace	
Metal or Tar Pot	
Other - Process Temperature > 1200° F	
Oven, Dehydrator, Dryer, Heater, Kiln, Calciner, Cooker, Roaster or Furnace with Process Temperature ≤ 800° F	20 ppm or 0.024 lb/mmBtu

Table 1 – NO_x Emission Limit (continued)

Equipment Category(ies)	Gaseous Fuel Limit (ppm @ 3% O_2, dry) or (lb/mmBtu heat input)
Degassing, Incinerator, or Soil Remediation ≤ 1200° F [1]	30 ppm or 0.036 lb/mmBtu
Make-Up Air Heater	
Oven, Dehydrator, Dryer, Heater, Kiln, Calciner, Cooker, Roaster or Furnace with Process Temperature > 800 ° F and ≤ 1200° F	
Tenter Frame or Carpet Dryer	
Other Air Heater located outside of building with temperature controlled zone inside building	
Other with Process Temperature ≤ 1200° F	
Equipment Category(ies)	**Liquid Fuel Limit** (ppm @ 3% O_2, dry) or (lb/mmBtu heat input)
Units with Process Temperature > 1200° F	60 ppm or 0.080 lb/mmBtu
Units with Process Temperature ≤ 1200° F	40 ppm or 0.053 lb/mmBtu

1 Emission limit applies when burning 100% natural gas, liquefied petroleum gas, propane or butane.

Table 2 – Compliance Schedule for In-Use Units

Equipment Category (ies)	Compliance Date
Combustion modification or change of location for Soil Remediation UNIT	January 1, 2011
Degassing, Evaporator, Incinerator, Tank, or Spray Booth Make-Up Air Heater manufactured prior to 1998	July 1, 2013
Other UNIT manufactured prior to 1986	July 1, 2010
Other UNIT manufactured prior to 1992	July 1, 2011
Other UNIT manufactured prior to 1998	July 1, 2012
Any UNIT manufactured after 1997 excluding Soil Remediation UNIT	July 1 of the year the unit is 15 years old

(2) Unit age shall be based on the original date of manufacture and determined by:

(A) Original manufacturer's identification or rating plate permanently fixed to the equipment. If not available, then;

(B) Invoice from manufacturer for purchase of equipment. If not available, then;

(C) Information submitted to AQMD with prior permit applications for the specific unit. If not available, then;

(D) Unit is deemed by AQMD to be 20 years old.

(3) Owners or operators of units operating with flue gas oxygen concentrations greater than 19% shall use a District approved test protocol to determine compliance with the emission limit specified in Table 1. The test protocol shall be submitted to the District at least 90 days prior to the scheduled test and be approved by the District Source Testing Division.

(4) Notwithstanding the requirements of paragraph (c)(1), units with combustion modifications completed prior to (date of adoption) that resulted in replacement of more than 75% of the of the rated heat input capacity shall comply with the applicable emission limit specified in Table 1 of paragraph (c)(1) ten years from the date the modification was performed.

(5) The date a combustion modification, as specified in paragraphs (c)(1) and (c)(4), is performed; shall be determined according to subparagraph (c)(2)(B), if not available, then subparagraph (c)(2)(C).

(6) Notwithstanding the requirements of paragraph (c)(1), a unit with a District permit to construct or permit to operate, and with a permit emission limit of one pound per day or less of nitrogen oxides on (date of adoption), shall comply with the applicable emission limit specified in Table 1 of paragraph (c)(1) five years later than the applicable compliance date in Table 2 of (c)(1).

(7) On or after January 1, 2010, any person owning or operating a unit subject to this rule shall perform combustion system maintenance in accordance with the manufacturer's schedule and specifications as identified in a manual and other written materials supplied by the manufacturer or distributor. The owner or operator shall maintain on site at the facility where the unit is being operated a copy of the manufacturer’s and/or distributor's written instructions and retain a record of the maintenance activity for a period of not less than three years. The owner or operator shall maintain on site at the facility where the unit is being operated, for as long as the unit is retained, a copy of the most recent District certification or District approved source test reports, conducted by an independent third party, demonstrating the specific unit complies with the

emission limit. The source test report(s) must identify that the source test was conducted pursuant to a District approved protocol. The model and serial numbers of the specified unit shall clearly be indicated on the source test report(s). The maintenance instructions, maintenance records and the source test report(s) or District certification shall be made available to the Executive Officer upon request.

(8) On or after January 1, 2010, any person owning or operating a unit subject to this rule shall install and maintain in service non-resettable, totalizing, fuel and time meters for each unit's fuel(s). Owners or operators of a unit with a combustion system that operates at only one firing rate shall install a non-resettable, totalizing, time or fuel meter for each fuel.

(9) Meters specified in paragraph (c)(8) that require electric power to operate shall be provided a permanent supply of electric power that cannot be unplugged, switched off, or reset except by the main power supply circuit for the building and associated equipment. Any person operating a unit subject to this rule shall not shut off electric power to a unit meter unless the unit is not operating and is shut down for maintenance or safety.

(10) A unit may be demonstrated to meet the applicable emission limit in Table 1 pursuant to the provisions of subdivisions (d) or (e). A unit shall demonstrate compliance with the emission limit in Table 1 every five years.

(11) Compliance by Certification

For units that do not allow adjustment of the fuel and combustion air for the combustion system by the owner or operator, and upon approval by the Executive Officer, an owner or operator may demonstrate compliance with the emission limit and demonstration requirement of this subdivision by certification granted to the manufacturer for any model of equipment sold for use in the District. Any unit certified pursuant to subdivision (e) shall be deemed in compliance with the emission limit in Table 1 and demonstration requirement of this subdivision for a period of five years from the date the unit is installed.

(12) Identification of Units

(A) New Manufactured Units

The manufacturer shall display the model number and the rated heat input capacity of the unit complying with subdivision (c) on the shipping container and permanent rating plate. The manufacturer shall also display the District certification status on the shipping container and on the unit when applicable.

(B) Modified Units

A unit with a modified combustion system (new or modified burners) shall display the new rated heat input capacity on a new permanent supplemental rating plate. The gross heat input shall be based on the maximum fuel input corrected for fuel heat content, temperature and pressure. Gross heat input shall be demonstrated by a calculation based on fuel consumption recorded by an in-line fuel meter.

(13) The owner or operator shall maintain on site a copy of all documents identifying the unit's rated heat input capacity for as long as the unit is retained. The rated heat input capacity shall be identified by a manufacturer's or distributor's manual or invoice and a permanent rating plate attached to the unit. If a unit is modified, the rated heat input capacity shall be calculated pursuant to subparagraph (c)(12)(B). The documentation of rated heat input capacity for modified units shall include the name of the company and person modifying the unit, a description of all modifications, the dates the unit was modified and calculation of rated heat input capacity. The documentation for modified units shall be signed by the highest ranking person modifying the unit.

(d) Compliance Determination

(1) All emission determinations shall be made using a District approved test protocol.

(2) All parts per million emission limits specified in subdivision (c) are referenced at 3 percent volume stack gas oxygen on a dry basis averaged over a period of 15 consecutive minutes or more.

(3) Compliance with the NO_X emission limits of subdivision (c) and determination of stack-gas oxygen and carbon dioxide concentrations for this rule shall be determined according to the following procedures:

(A) District Source Test Method 100.1 – Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling (March 1989); or

(B) District Source Test Method 7.1 – Determination of Nitrogen Oxide Emissions from Stationary Sources (March 1989); or

(C) ASTM Method D6522-00 – Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers; or

(D) United States Environmental Protection Agency Conditional Test Method CTM-030 – Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers and Process Heaters Using Portable Analyzers; and

(E) District Source Test Method 10.1 – Carbon Monoxide and Carbon Dioxide by Gas Chromatograph/Non-Dispersive Infrared Detector (GC/NDIR) – Oxygen by Gas Chromatograph-Thermal Conductivity (GC/TCD) (March 1989); or

(F) Any alternative test method determined approved before the test in writing by the Executive Officers of the District, the California Air Resources Board and the United States Environmental Protection Agency.

(4) Records of source tests shall be maintained for as long as the unit is retained and made available to District personnel upon request. Emissions determined to exceed any limits established by this rule through the use of any of the test methods specified in subparagraphs (d)(3)(A) through (d)(3)(F) shall constitute a violation of this rule.

(5) For any operator who chooses the pound per million Btu of heat input compliance option of subdivision (c), NO_X emissions in pounds per million Btu of heat input shall be calculated using procedures in 40 CFR Part 60, Appendix A, Method 19, Sections 2 and 3.

(e)Certification

(1) Unit Certification

For units that do not allow adjustment of the fuel and combustion air for the combustion system by the owner or operator, any manufacturer that distributes for sale or sells units or burner systems for use in the District may elect to apply to the Executive Officer to certify such units or burner systems as compliant with subdivision (c).

(2) Manufacturer Confirmation of Emissions

Any manufacturer's application to the Executive Officer to certify a model of equipment as compliant with the emission limit and demonstration requirement of subdivision (c) shall obtain confirmation from an independent testing laboratory prior to applying for certification that each unit model complies with the applicable requirements of subdivision (c). This confirmation shall be based upon District approved emission tests of standard model units and a District approved protocol shall be adhered to during the confirmation testing of all units subject to this rule. Emission testing shall comply with the requirements of paragraphs (d)(1) through (d)(5).

(3) When applying for unit(s) certification, 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 and dated by the manufacturer's responsible official and shall attest to the accuracy of all statements;

(B) General Information

(i) Name and address of manufacturer,

(ii) Brand name, if applicable,

(iii) Model number, as it appears on the unit rating plate; and

(iv) Rated Heat Input Capacity, gross output of burner(s) and number of burners;

(C) A description of each model being certified; and

(D) A source test report verifying compliance with the applicable emission limit in 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 the District approved Protocol for each unit tested. The source test shall

have been conducted no more than ninety (90) days prior to the date of submittal to the Executive Officer.

(4) When applying for unit certification, the manufacturer shall submit the information identified in paragraph (e)(3) no more than ninety (90) days after the date of the source test identified in subparagraph (e)(3)(D) and at least 120 days prior to the date of the proposed sale and installation of any District certified unit.

(5) The Executive Officer shall certify a unit model which complies with the provisions of subdivision (c) and of paragraphs (e)(2), (e)(3), and (e)(4).

(6) Certification status shall be valid for four years from the date of approval by the Executive Officer. After the fourth year, recertification shall be required by the Executive Officer according to the requirements of paragraphs (e)(2), (e)(3), and (e)(4).

(f) Enforcement

The Executive Officer may inspect distributors, retailers, and installers of units located in the District, and conduct such tests as are deemed necessary to ensure compliance with subdivisions (c) and (e).

(g)Exemptions

(1) The provisions of this rule shall not apply to units:

(A) subject to the nitrogen oxide limits of District Rules 1109, 1110.2, 1111, 1112, 1117, 1121, 1134, 1135, 1146, 1146.1, or 1146.2; or

(B) located at RECLAIM facilities.

(2) The provisions of this rule shall not apply to charbroilers.

(3) New degassing units, evaporators, incinerators, tanks, and spray booth make-up air heaters installed after (date of adoption) and before January 1, 2011 are exempt from the emission limit in Table 1 until July 1 of the year the unit is 15 years old.

(4) New or relocated remediation units installed after (date of adoption) and before January 1, 2011 are exempt from the emission limit in Table 1 until a combustion modification or change of location on or after January 1, 2011.

APPENDIX B

CONSTRUCTION AND OPERATIONS CALCULATIONS

LIST OF WORKSHEETS

Worksheet B-1: Retrofit with Ultra-Low NOx Burners between 2010-2014

PAR 1147 Affected Equipment	No. of Units	Construction Activity
	1	Install Ultra-Low NOx burners on 2,462 gaseous units between 2010-2014

Construction Schedule - 1 day per unit

Activity	Equipment Type	No. of Equipment	Hrs/day	Crew Size
Off-Road Mobile Source Operations	Welding Machine	1	2	1
Off-Road Mobile Source Operations	Pick-up Truck	1	-	1

Construction Equipment Emission Factors	VOC	CO	NOx	Sox	PM10	PM2.5	CO2	CH4
Equipment Type*	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Welding Machine (composite)	0.0805	0.2246	0.2920	0.0003	0.0270	0.0259	25.6000	0.0073

**Equipment is assumed to be diesel fueled.*

Source: CARB's Off-Road Mobile Source Emission Factors for Scenario Year 2010

http://www.aqmd.gov/ceqa/handbook/offroad/offroadEF07_25.xls

	Construction Vehicle (Mobile Source) Emission Factors for Years 2010-2014							
	VOC	CO	NOx	Sox	PM10	PM2.5	CO2	CH4
Construction Related Activity	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Offsite (Construction Worker Vehicle)	0.00091	0.00826	0.00092	0.00001	0.00009	0.00005	1.09568	0.00008146
Offsite (Pickup truck deliveries)	0.00258	0.01840	0.02060	0.00003	0.00075	0.00064	2.73220	0.00012576

Passenger Vehicles/Delivery Trucks for Scenario Year 2010

http://www.aqmd.gov/ceqa/handbook/onroad/onroadEF07_26.xls

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Offsite (Construction Worker)	2	25
Offsite (Delivery Truck – Medium Duty)	2	50

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/hr) x No. of Equipment x Work Day (hr/day) = Onsite Construction Emissions (lbs/day)

Equipment Type	VOC lb/day	CO lb/day	NOx lb/day	Sox lb/day	PM10 lb/day	PM2.5 lb/day	CO2 lb/day	CH4 lb/day
Welding Machine	0.16	0.45	0.58	0.00	0.05	0.048	51.20	0.0146
TOTAL	**0.16**	**0.45**	**0.58**	**0.00**	**0.05**	**0.048**	**51.20**	**0.0146**

Incremental Increase in Offsite Combustion Emissions from Construction Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x Number of workers x Trip length (mile) = Offsite Construction Emissions (lbs/day)

Vehicle	VOC lb/day	CO lb/day	NOx lb/day	Sox lb/day	PM10 lb/day	PM2.5 lb/day	CO2 lb/day	CH4 lb/day
Offsite (Construction Worker Vehicle)	0.05	0.41	0.05	0.00	0.00	0.00	54.78	0.004073
Offsite (Pickup truck deliveries)	0.26	1.84	2.06	0.00	0.08	0.06	273.22	0.012576
TOTAL	**0.30**	**2.25**	**2.11**	**0.00**	**0.08**	**0.07**	**328.00**	**0.016649**

Source: EMFAC 2007 (v2.3) Emission Factors (On-Road Vehicles, Scenario Year 2010)

http://www.aqmd.gov/cega/handbook/onroad/onroadEF07_26.xls

Total Incremental Combustion Emissions from Construction Activities

	VOC lb/day	CO lb/day	NOx lb/day	Sox lb/day	PM10 lb/day	PM2.5 lb/day	CO2 lb/day	CH4 lb/day
Group I: Equipment & Workers' Vehicles (1 unit)	**0.46**	**2.70**	**2.69**	**0.00**	**0.13**	**0.11**	**379.20**	**0.031249**
Significant Threshold	75	550	100	150	150	55	n/a	n/a
Exceed Significance?	NO	NO	NO	NO	NO	NO	n/a	n/a

Incremental Increase in Fuel Usage From Construction Equipment and Workers' Vehicles

Construction Activity	Total Project Hours of Operation*	Equipment Type	Diesel Fuel Usage (gal/hr)**	Diesel Fuel Usage (gal/project)**	Gasoline Fuel Usage (gal/yr)***
Operation of Portable Equipment	2	Welding Machines	1.182	2.36	N/A
Workers' Vehicles – Commuting	N/A	Light-Duty Trucks	N/A	N/A	2.50
Workers' Vehicles – Offsite Delivery/Haul	N/A	Pickup truck for deliveries****	N/A	N/A	5.00
		TOTAL	**2.36**		**7.50**

**Assume construction will take approximately 1 day (8 hrs/day max), but welder will only be needed for ~2 hours per day.*

***Based on CARB's Off-Road Model (Version 2.0) for Equipment Year 2010.*

****Assume that construction workers' commute vehicle and pick-up truck use gasoline and get 20 mi/gal and round trip length is 50 miles.*

Worksheet B-2: Retrofit with Ultra-Low NOx Burners between 2015-2023

PAR 1147 Affected Equipment	No. of Units	Construction Activity
	1	Install Ultra-Low NOx burners on 2,462 gaseous units between 2015-2023

Construction Schedule - 1 day per unit

Activity	Equipment Type	No. of Equipment	Hrs/day	Crew Size
Off-Road Mobile Source Operations	Welding Machine	1	2	1
On-Road Mobile Source Operations	Pick-up Truck	1	-	1

Construction Equipment Emission Factors	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	CH4
Equipment Type*	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Welding Machine (composite)	0.0534	0.1994	0.2301	0.0003	0.0187	0.0179	25.6	0.0048

**Equipment is assumed to be diesel fueled.*

Source: CARB's Off-Road Mobile Source Emission Factors for Scenario Year 2015

http://www.aqmd.gov/ceqa/handbook/offroad/offroadEF07_25.xls

Construction Vehicle (Mobile Source) Emission Factors for Year 2015-2023	VOC	CO	NOx	SOx	PM10	PM2.5	CO2	CH4
Construction Related Activity	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Offsite (Construction Worker Vehicle)	0.00066	0.00614	0.00060	0.00001	0.00009	0.00006	1.10920	0.00005923
Offsite (Pickup truck deliveries)	0.00173	0.01169	0.01285	0.00003	0.00050	0.00041	2.81240	0.00008076

Source: Passenger Vehicles/Delivery Trucks for Scenario Year 2015

http://www.aqmd.gov/ceqa/handbook/onroad/onroadEF07_26.xls

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Offsite (Construction Worker)	2	25
Offsite (Pickup truck deliveries)	2	50

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/hr) x No. of Equipment x Work Day (hr/day) = Onsite Construction Emissions (lbs/day)

Equipment Type	VOC lb/day	CO lb/day	NOx lb/day	SOx lb/day	PM10 lb/day	PM2.5 lb/day	CO2 lb/day	CH4 lb/day
Welding Machine	0.11	0.40	0.46	0.00	0.04	0.038	51.20	0.0096
TOTAL	**0.11**	**0.40**	**0.46**	**0.00**	**0.04**	**0.038**	**51.20**	**0.0096**

Incremental Increase in Offsite Combustion Emissions from Construction Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x Number of workers x Trip length (mile) = Offsite Construction Emissions (lbs/day)

Vehicle	VOC lb/day	CO lb/day	NOx lb/day	SOx lb/day	PM10 lb/day	PM2.5 lb/day	CO2 lb/day	CH4 lb/day
Offsite (Construction Worker Vehicle)	0.03	0.31	0.03	0.00	0.00	0.00	55.46	0.0029615
Offsite (Delivery Truck - pickup truck)	0.17	1.17	1.29	0.00	0.05	0.04	281.24	0.008076
TOTAL	**0.21**	**1.48**	**1.32**	**0.00**	**0.05**	**0.04**	**336.70**	**0.0110375**

Source: EMFAC 2007 (v2.3) Emission Factors (On-Road Vehicles, Scenario Year 2015)

http://www.aqmd.gov/ceqa/handbook/onroad/onroadEF07_26.xls

Total Combustion Emissions from Construction Activities

	VOC lb/day	CO lb/day	NOx lb/day	SOx lb/day	PM10 lb/day	PM2.5 lb/day	CO2 lb/day	CH4 lb/day
Group I: Equipment & Workers' Vehicles (1 unit)	**0.32**	**1.88**	**1.78**	**0.00**	**0.09**	**0.078**	**387.90**	**0.0206375**
Significant Threshold	75	550	100	150	150	55	n/a	n/a
Exceed Significance?	NO	NO	NO	NO	NO	NO	n/a	n/a

Incremental Increase in Fuel Usage From Construction Equipment and Workers' Vehicles

Construction Activity	Total Project Hours of Operation*	Equipment Type	Diesel Fuel Usage (gal/hr)**	Diesel Fuel Usage (gal/project)**	Gasoline Fuel Usage (gal/yr)***
Operation of Portable Equipment	2	Welding Machines	1.179	2.36	N/A
Workers' Vehicles - Commuting	N/A	Light-Duty Trucks	N/A	N/A	2.50
Workers' Vehicles - Offsite Delivery/Haul	N/A	Pickup truck for deliveries****	N/A	N/A	5.00
		TOTAL	**2.36**		**7.50**

**Assume construction will take approximately 1 day (8 hrs/day max), but welder will only be needed for ~2 hours per day.*

***Based on CARB's Off-Road Model (Version 2.0) for Equipment Year 2015.*

****Assume that construction workers' commute vehicle and pick-up truck use gasoline and get 20 mi/gal and round trip length is 50 miles.*

Worksheet B-3: Emissions Summary Due to Retrofits of Ultra-Low NOx Burners between 2010-2014 and 2015-2023

Emissions Summary Due to Retrofits of Ultra-Low NOx Burners between 2010-2014 and 2015-2023

Peak Construction **2010-2014**	**VOC** lbs/day	**CO** lbs/day	**NOx** lbs/day	**SOx** lbs/day	**PM10** lbs/day	**PM2.5** lbs/day	**CO2** lbs/day	**CH4** lbs/day	**CO2** lbs/year	**CH4** lbs/year	**CO2eq** Metric tons/year
TOTAL for 1 unit in one day	**0.46**	**2.70**	**2.69**	**0.00**	**0.13**	**0.07**	**379.20**	**0.031249**	n/a	n/a	n/a
Peak Daily TOTAL for 10 units installed in one day	**4.65**	**27.02**	**26.90**	**0.04**	**1.33**	**0.67**	**3792.04**	**0.31249**	n/a	n/a	n/a
Peak TOTAL for 2,462 units installed in one year	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**933600.25**	**76.94**	**424.13**
SIGNIFICANCE THRESHOLD	75	550	100	150	150	55	n/a	n/a	n/a	n/a	n/a
SIGNIFICANT?	NO	NO	NO	NO	NO	NO	n/a	n/a	n/a	n/a	n/a
2015-2023											
TOTAL for 1 unit in one day	**0.32**	**1.88**	**1.78**	**0.00**	**0.09**	**0.78**	**387.90**	**0.0206375**	n/a	n/a	n/a
Peak Daily TOTAL for 10 units installed in one day	**3.20**	**18.80**	**17.80**	**0.04**	**0.90**	**7.80**	**3879.00**	**0.206375**	n/a	n/a	n/a
Peak TOTAL for 2,462 units installed in one year	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**955009.80**	**50.81**	**433.59**
SIGNIFICANCE THRESHOLD	75	550	100	150	150	55	n/a	n/a	n/a		n/a
SIGNIFICANT?	NO	NO	NO	NO	NO	NO	n/a	n/a	n/a		n/a