air pollution control district
SANTA BARBARA COUNTY

DRAFT

PERMIT to OPERATE 13725-R3

and

PART 70 OPERATING PERMIT 13725

UNIVERSITY OF CALIFORNIA
At SANTA BARBARA (UCSB)

OWNER/OPERATOR

UNIVERSITY OF CALIFORNIA - SANTA BARBARA

Santa Barbara County
Air Pollution Control District

DECEMBER 2023

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ABBREVIATIONS/ACRONYMS

AP-42	USEPA's *Compilation of Emission Factors*
District	Santa Barbara County Air Pollution Control District
ASTM	American Society for Testing Materials
ATC	Authority to Construct
BACT	Best Available Control Technology
Btu	British thermal unit
CAM	compliance assurance monitoring
CARB	California Air Resources Board
CEMs	Continuous Emissions Monitors
CAP	Clean Air Plan
dscf	dry standard cubic foot
°F	degree Fahrenheit
FID	facility identification
FUMP	Fuel Use Monitoring Plan
gal	gallon
gr	grain
HAP	hazardous air pollutant (as defined by CAAA, Section 112(b))
H_2S	hydrogen sulfide
I&M	Inspection & Maintenance
ISO	International Standards Organization
k	kilo (thousand)
l	liter
lb	pound
lbs/day	pounds per day
lbs/hr	pounds per hour
M	mega (million)
MACT	Maximum Achievable Control Technology
MM	million
MW	molecular weight
NAR	Nonattainment Review
NEI	net emissions increase
NSR	New Source Review
NSPS	New Source Performance Standards
NESHAP	National Emissions Standards for Hazardous Air Pollutants
O_2	oxygen
PM	particulate matter
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
ppm(vd or w)	parts per million (volume dry or weight)
psia	pounds per square inch absolute
psig	pounds per square inch gauge
PRD/PSV	pressure relief device
PTO	Permit to Operate
RACT	Reasonably Available Control Technology
ROC	reactive organic compounds, same as "VOC" as used in this permit
scf	standard cubic foot
scfd (or scfm)	standard cubic feet per day (or per minute)
SIP	State Implementation Plan
SSID	stationary source identification
STP	standard temperature (60°F) and pressure (29.92 inches of mercury)
THC, TOC	total hydrocarbons, total organic compounds
TVP	true vapor pressure

USEPA	United States Environmental Protection Agency
VE	visible emissions
VRS	vapor recovery system
UCSB	University of California at Santa Barbara
w.c.	water column

1.0 INTRODUCTION

1.1. Purpose

General. The Santa Barbara County Air Pollution Control District ("District") began issuing permits to the University of California at Santa Barbara (UCSB) in the early 1980s for external combustion units (e.g., boilers, water heaters). Due to the loss of rule exemptions and new rules and regulations, an increased number of external combustion units and internal combustion engines have since been issued permits. This Part 70 permit consolidates all active permits associated with the facilities that comprise the UCSB stationary source. There are external combustion units, internal combustion engines, spray booths and gasoline dispensing facilities subject to this Part 70 permit.

Part 70 Permitting. This is the second renewal of the Part 70 permit for the UCSB stationary source (SSID = 2795), which is a major source for NO_x and CO, based on a federal potential to emit greater than 100 tons per year of NO_x and CO. The conditions listed in this permit are based on federal, state and local rules and requirements. Sections 9.A, 9.B and 9.C of this permit are enforceable by the District, the United States Environmental Protection Agency (USEPA) and the public since these sections are federally enforceable under Part 70. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit that part of the permit referred to is federally enforceable. Conditions listed in Section 9.D are only enforceable by the District.

Pursuant to the stated aims of Title V of the CAAA (Clean Air Act Amendment) of 1990 (i.e., the Part 70 operating permit program), this permit has been designed to meet two objectives. First, compliance with all conditions in this permit would ensure compliance with all federally-enforceable requirements for the facility. Second, the permit would be a comprehensive document to be used as a reference by the permittee, the regulatory agencies and the public to assess compliance.

1.2. Stationary Source/Facility Overview

1.2.1 Stationary Source/Facility Overview: This facility consists of a university campus located in Santa Barbara, CA. Natural gas-fired external combustion equipment is used for space heating and diesel-fired internal combustion engines are used for emergency backup power. These are the primary pollutant-emitting sources subject to this permit.

1.2.2 Facility New Source Review Overview: A list of the permits that have been incorporated into this Part 70 permit is provided in Attachment 10.9. Those permit actions which are subject to New Source Review are identified in Attachment 10.9.

1.3 Emission Sources

The emission sources associated with this facility consist of the following:

- 48 Internal Combustion Engines (backup generators)
- 94 External Combustions Units (boilers, water heaters)
- Two (2) Gasoline Fueling Stations
- Two (2) Spray booths

Section 4.0 of the permit provides the District's engineering analysis of these emission sources. Section 5.0 of the permit describes the allowable emissions from each permitted emissions unit. A list of all permitted equipment is provided in Attachment 10.1.

1.4 Emission Control Overview

1.4.1 Internal Combustion Engines: Emissions from existing diesel-fired emergency-standby IC engines are controlled by limiting the hours of maintenance and testing operations. Newly installed emergency standby IC engines must also be certified to meet current EPA Tier standards. There are no add-on emission controls associated with any of the internal combustion engines.

1.4.2 External Combustion Units: The following units are equipped with Low-NO_x burners: Devices: #114251, #114252, #386140, #386141, #386142, #386143, #386144, #386145, #387629, #388327, #388328, #388329, #388840, #388933, #388935, #388936, #388937, #388938, #388939, #388941, #388948, #393008, #393011, #393012, #393027, #393029, #393030, #393200, #393206, #393266, #393267, #393268, #393269, #393270, #393439, #393440, #393441, #393442, #393443, #393445, #393446, #393447, #393448, #393593, #393594, #393622, #393623, #393624, #393625, #393626, #394662, #394764, #394908, #394910, #395683, and #395684.

1.4.3 Gasoline Tank: The aboveground storage tank at the Marine Biotech Lab, building 555 uses a balance type vapor recovery system (VRS) to control ROC vapor emissions. Only Phase I controls are utilized because the tank is only used to fuel marine vessels. The aboveground storage tank at Mesa Road, building 336 uses Phase I enhanced vapor recover (EVR) to control ROC vapor emissions. In addition, Phase II vapor recovery system (VRS) is used to control ROC vapor emissions from the two nozzles. Both tanks are classified as protected per the executive orders found in PTO 13182 and PTO 15539 by CARB. Protected ASTs are constructed with a primary (inner) tank encased by a secondary (outer) tank, with a layer of insulating material (at least three inches thick) between the primary and secondary walls. UCSB has also installed CARB EVR-certified P/V valves in order to comply with CARB standing loss control vapor recovery requirements for vapor recovery systems used on aboveground gasoline storage tanks.

1.4.4 Spray Booths: The spray booths in the paint shop and building 223 are equipped with overspray filters. ROC emissions are controlled by using compliant coatings required by District Rules 330 and 351. Some reduction in particulates is achieved via filters in the spray booths.

1.5 Offsets/Emission Reduction Credit Overview

The UCSB stationary source exceeds the NOx offset threshold of Regulation VIII, however UCSB has not been issued an NSR permit that has triggered offset requirements as of this permit issuance.

1.6 Part 70 Operating Permit Overview

1.6.1 Federally-Enforceable Requirements: All federally enforceable requirements are listed in 40 CFR Part 70.2 (Definitions) under "applicable requirements." These include all SIP-approved District Rules, all conditions in District-issued Authority to Construct permits issued pursuant to SIP-approved District Rules, and all conditions applicable to major sources under federally promulgated rules and regulations. All these requirements are enforceable by the public under CAAA. (See Section 3 for a list of the federally enforceable requirements).

1.6.2 Insignificant Emissions Units: Insignificant emission units are defined under District Rule 1301 as any regulated air pollutant emitted from the unit, excluding HAPs, that are less than 2 tons per year based on the unit's potential to emit and any HAP regulated under section 112(g) of the Clean Air Act that does not exceed 0.5 ton per year based on the unit's potential to emit. Insignificant activities were listed in the Part 70 application with supporting calculations. Applicable requirements may apply to insignificant units.

1.6.3 Federal Potential to Emit: The federal potential to emit (PTE) of a stationary source does not include fugitive emissions of any pollutant, unless the source is: (1) subject to a federal NSPS/NESHAP requirement which was in effect as of August 7, 1980, or (2) included in the 29-category source list specified in 40 CFR 51.166 or 52.21. The federal PTE does include all emissions from any insignificant emissions units. See Table 5.10 for the federal PTE for this source.

1.6.4 Permit Shield: The operator of a major source may be granted a shield: (a) specifically stipulating any federally-enforceable conditions that are no longer applicable to the source and (b) stating the reasons for such non-applicability. The permit shield must be based on a request from the source and its detailed review by the District. Permit shields cannot be indiscriminately granted with respect to all federal requirements. UCSB has made no requests for a permit shield.

1.6.5 Alternate Operating Scenarios: A major source may be permitted to operate under different operating scenarios, if appropriate descriptions of such scenarios are included in its Part 70 permit application and if such operations are allowed under federally-enforceable rules. UCSB has made no requests for alternative operating scenarios.

1.6.6 Compliance Certification: Part 70 permit holders must certify compliance with all applicable federally-enforceable requirements including permit conditions. Such certification must accompany each Part 70 permit application and be re-submitted annually before March 1st or on a more frequent schedule specified in the permit. A "responsible official" of the owner/operator company whose name and address is listed prominently in the Part 70 permit signs each certification. (See Section 1.6.10 below)

1.6.7 Permit Reopening: Part 70 permits are re-opened and revised if the source becomes subject to a new rule or new permit conditions are necessary to ensure compliance with existing rules. The permits are also re-opened if they contain a material mistake or the emission limitations or other conditions are based on inaccurate permit application data.

1.6.8 Hazardous Air Pollutants (HAPs): The requirements of Part 70 permits also regulate emissions of HAPs from major sources through the imposition of maximum achievable control technology (MACT), where applicable. The federal PTE for HAP emissions from a source is computed to determine MACT or any other rule applicability. (See Section 5.4)

1.6.9 Compliance Assurance Monitoring (CAM): The CAM rule became effective on April 22, 1998. This rule affects emission units at the source subject to a federally-enforceable emission limit or standard that uses a control device to comply with the emission standard, and either pre-control or post-control emissions exceed the Part 70 source emission thresholds. Sources subject to CAM Rule must submit a CAM Rule Compliance Plan along with their Part 70 operating permit renewal applications. (See Section 4.9.3). The District has determined that no emissions unit at this facility is subject to CAM Rule.

1.6.10 Responsible Official: The designated responsible official and his/her mailing address is:

Renée Bahl, Associate Vice Chancellor,
Design, Facilities, and Safety Services
UCSB Office of the Vice Chancellor
University of Santa Barbara, CA 93106

2.0 DESCRIPTION OF PROJECT AND PROCESS DESCRIPTION

2.1 Project Ownership: Regents of the University of California.

2.2 Geographic Location: The University of California at Santa Barbara is located just north of the City of Santa Barbara near Goleta, California on 1,055 acres adjacent to the Pacific Ocean.

2.3 Facility Description: The facility consists of various buildings utilized for student education, research, housing, athletics and administrative services. Utility services include backup emergency power and heating systems. These utilities service sources are the primary equipment included in this permit. See Attachment 10.10 for facility maps.

2.4 Equipment Description: Only equipment that has a potential to emit air contaminants, as determined by the District, is subject to this operating permit. This permit includes emission, operation, monitoring, recordkeeping, and reporting requirements for the equipment subject to this permit. See Attachment 10.1 for a list of equipment.

3.0 REGULATORY REVIEW

All enforceable requirements are listed in this section. These include all District Rules, all conditions in the District-issued Authority to Construct permits and applicable federally promulgated rules and regulations.

3.1. Permit Exemptions Claimed

The following equipment, operations and activities are exempt from permit. A list of associated equipment is provided in Attachment 10.12, *Permit Exempt Equipment.*

Table 3.1: Permit Exemptions Claimed

Insignificant Equipment/Emissions Description	Basis for Exemption
Engines used in aircraft, locomotive, marine and motor vehicles as defined in Section 67 of the California Vehicle Code, but not including any engine mounted on such vehicles that would otherwise require a permit under the provisions of SBCAPCD Rules and Regulations	202 F (a), (b), (c)
Spark ignition piston-type internal combustion engines used exclusively for emergency electrical power generation or emergency pumping of water for flood control or firefighting if the engine operates no more than 200 hours per calendar year	202 F (d)
Compression ignition engines with a rated brake horsepower of less than 50 bhp	202 F (e)
Spark ignition piston-type internal combustion engines with a rated brake horsepower of less than 50 bhp	202 F (f)
Combustion equipment with a maximum heat input of less than or equal to two (2) million British thermal units per hour is exempt from permit requirements if fired exclusively with PUC quality natural gas or LPG which meets Gas Processors Association standards.	202. G 1
Abrasive blast equipment	202 H (1), (2), (3)
Coating applications equipment and operations	202 I (1), (2), (3), (4), (5), (6)
Food Processing and preparation equipment	202 K (1), (2), (3), (4), (5), (6), (7)
Glass, ceramic, metallurgical processing and fabrication equipment and operations. Kilns used for firing ceramic ware.	202 M (3)
Laboratory equipment and operations used exclusively for chemical or physical analysis and bench scale laboratory equipment	202 N (1)
Material working and handling equipment and operations used for buffing (except automatic or semi-automatic tire buffers) or polishing, carving, cutting, drilling, machining, routing, sanding, sawing, surface grinding, or turning of ceramic artwork, ceramic precision parts, leather, metals, plastics, rubber, fiberboard, masonry, carbon or graphite.	202 O (3)
Application of architectural coating in the repair and maintenance of a stationary structure	202 D (14)
Solvent cleaning operations including: solvent cleaning containers less than 1.00 gallon, wipe cleaning operations using less than 55 gallons/year, and solvent cleaning associated with janitorial cleaning, including graffiti removal	202 U (1), (3), (5)

3.2. Compliance with Applicable Federal Rules and Regulations

3.2.1 40 CFR Parts 51/52{*New Source Review (Nonattainment Area Review and Prevention of Significant Deterioration)*}: UCSB was originally permitted in the 1980s under District Rule 205.C. That rule was superseded by District Regulation VIII (*New Source Review*) in April 1997, which was subsequently revised in August 2016. Compliance with Regulation VIII ensures that this facility will comply with federal NSR requirements.

3.2.2 40 CFR Part 60 *{New Source Performance Standards}:* Subpart IIII applies to owners and operators of stationary compression ignition engines that are constructed, modified, or reconstructed after July 11, 2005. Engines subject to this subpart are required to meet emission standards specific to the model year of the engine. Several engines are subject to this subpart and meet these standards.

3.2.3 40 CFR Part 63 Subpart ZZZZ {*National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating internal Combustion Engines*}: Subpart ZZZZ applies to owners and operators of stationary reciprocating IC engines (RICE). For area sources of HAP emissions, stationary RICE are "existing" if construction or reconstruction commenced before June 12, 2006. Engines that are not categorized as existing are considered "new". HAP emissions associated with the UCSB stationary source are less than 1.0 tpy therefore it qualifies as an area source. All emergency stationary RICE located at UCSB are exempt from NESHAP requirements per the sources classification as an institution of higher education.

3.2.4 40 CFR Part 63 Subpart HHHHHH: On January 9, 2008, the EPA adopted National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources (Subpart HHHHHH). This regulation applies to auto body shops as well as businesses that spray-apply coatings to metal or plastic, or use methylene chloride (MeCl) to do paint stripping. For more information about the regulation, see the District webpage here: https://www.ourair.org/paint-strip-surface-coat/

3.2.5 40 CFR Part 70 {*Operating Permits*}: UCSB is a major source for NO_x and CO. Per UCSB's application, they applied for a Part 70 permit according to the timelines of Rule 1304. UCSB has not requested to become a Rule 370 source.

3.3. Compliance with Applicable State Rules and Regulations

3.3.1 Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition (CI) Engines (CCR Section 93115, Title 17): This ATCM applies for all stationary diesel-fueled engines rated 50 brake horsepower (bhp) and greater at this facility. On March 17, 2005, District Rule 202 was revised to remove the compression-ignited engine (e.g. diesel) permit exemption for units rated 50 bhp and greater to allow the District to implement the State's ATCM for Stationary Compression Ignition Engines.

Owners of in-use stationary diesel internal combustion engines (DICE) for emergency use are subject to the requirements of Table 3 of the ATCM. In-use emergency fire pump engines may operate the number of hours necessary to comply with the testing requirements of the National Fire Protection Association standards (NFPA-25). By limiting annual maintenance and testing hours, these engines are not required to meet any new emission standards (e.g. engine retrofits are not required). The ATCM does require that the hours of operation be monitored with a non-

resettable hour meter, that CARB Diesel Fuel be used (or approved alternative) and that detailed records of use be recorded and reported.

Owners and operators of new stationary DICE engines for emergency use are subject to the emission standards of Table 1 of the ATCM and the operating requirements of Section 93115.6. Owners and operators of new stationary DICE fire pump engines are subject to the emission standards of Table 2 of the ATCM and the operating requirements of Section 93115.6.

3.4. Compliance with Applicable Local Rules and Regulations

Applicability Tables: These tables are based on data available from the District's administrative files and from the UCSB Part 70 Operating Permit application. Table 3.2 lists the federally-enforceable District promulgated rules that are "generic" and apply to the facility. Table 3.3 lists the federally-enforceable District promulgated rules that are "unit-specific". Table 3.4 lists non federally-enforceable District rules.

The District NSR rule which has been approved into the State Implementation Plan (SIP) is Rule 205.C. The current District NSR rule is 809. Rule 809 has been submitted to the EPA, but it has not yet been approved into the SIP. The EPA's guidance in situations such as this, where a rule has been updated but not yet approved into the SIP, is to rely on the current rule as long as it is more stringent than the previous rule. Since Rule 809 is an updated NSR rule that was adopted 35 years after Rule 205.C, the district relies on Rule 809 when issuing permits.

3.4.1 Rules Requiring Further Discussion: This section provides a more detailed discussion regarding the applicability and compliance of certain rules for UCSB:

Rule 201 - Permits Required: This rule applies to any person who builds, erects, alters, replaces, operates or uses any article, machine, equipment, or other contrivance which may cause the issuance of air contaminants. The equipment included in this permit is listed in Attachment 10.1. An Authority to Construct is required to return any de-permitted equipment to service and may be subject to New Source Review.

Rule 210 - Fees: Pursuant to Rule 201.G, District permits are reevaluated every three years. This includes the re-issuance of the underlying PTO. Also included are the PTO fees. The fees for this facility are based on District Rule 210, Fee Schedule A; however Part 70 specific costs are based on cost reimbursement provisions (Rule 210.C). The fee calculations for this permit are included as an attachment to the permit.

Rule 301 - Circumvention. This rule prohibits the concealment of any activity that would otherwise constitute a violation of Division 26 (Air Resources) of the California H&SC and the District rules and regulations. To the best of the District's knowledge, UCSB is operating in compliance with this rule.

Rule 302 - Visible Emissions. This rule prohibits the discharge from any single source any air contaminants for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade than a reading of 1 on the Ringelmann Chart or of such opacity to obscure an observer's view to a degree equal to or greater than a reading of 1 on the Ringelmann Chart.

Rule 303 - Nuisance. This rule prohibits UCSB from causing a public nuisance due to the discharge of air contaminants. This rule is included in the SIP.

Rule 309 - Specific Contaminants. Under Section "A", no source may discharge sulfur compounds and combustion contaminants in excess of 0.2 percent as SO_2 (by volume) and 0.3 gr/scf (at 12% CO_2) respectively. All diesel powered piston IC engines have the potential to exceed the combustion contaminant limit if not properly maintained.

Rule 311 - Sulfur Content of Fuel. This rule limits the sulfur content of fuels combusted at UCSB to 0.5 percent (by weight) for liquids fuels and 50 gr/100 scf (calculated as H_2S) {or 796 ppmvd} for gaseous fuels. Section B and Section C of this rule limit the sulfur content of gaseous fuels to no more than 239 ppmv as H_2S. The permittee uses CARB certified diesel (total sulfur content of 0.0015 percent by weight) and PUC quality natural gas (total sulfur content of 80 ppmv and H_2S content of 4 ppmv) which comply with this rule.

Rule 321 – Solvent Cleaning Machines and Solvent Cleaning. This Rule applies to any non-janitorial solvent cleaning operations at UCSB not specifically subject to or exempt from District Rules 330, 351 or 353. The Rule sets equipment standards and ROC content limits for various solvent cleaning activities. Compliance with this rule is based on adherence with the requirements of permit condition 9.C.3.

Rule 323.1 - Architectural Coatings: This rule sets the standards for any architectural coating that is supplied, sold, offered for sale, or manufactured for use within the District.

Rule 330 - Surface Coating of Metal Parts and Products. This rule is applicable to any person who manufactures, applies or specifies the use of surface coatings for metal parts and products. UCSB employs surface coating operations throughout the facility. Compliance with this rule is based on adherence to the requirements of permit condition 9.C.3.

Rule 333 - Control of Emissions from Reciprocating Internal Combustion Engines: This rule applies to all engines with a rated brake horsepower of 50 or greater. Permit exempt engines are not subject to this rule. The emergency standby IC engines at the facility are compression ignition emergency standby engines and are exempt from the provisions of the Rule per Section B.1.d.

Rule 351 - Surface Coating of Wood Products. This rule applies to the application of coating to, and surface preparation of wood products. UCSB employs surface coating operations throughout the facility. Compliance with this rule is based on adherence to the requirements of permit condition 9.C.3.

Rule 352 - Natural Gas-Fired Fan-Type Central Furnaces and Small Water Heaters.
This rule applies to any person who manufactures, supplies, sells, offers for sale, installs, or solicits the installation of any natural gas-fired fan-type central furnaces or water heaters for use within the District.

Rule 353 – Adhesives and Sealants. This Rule is applicable to any person who supplies, sells, offers for sale, distributes, manufactures, solicits the application of, or uses any adhesive product, sealant product, or associated solvent for use within the District. The rule sets ROC limits for various product categories and activities. The rule is not applicable to adhesive or sealant products that contain less than 20 grams of ROC per liter or sold in containers of 16 fluid ounces or less.

Rule 360 – Boilers, Water Heaters, and Process Heaters (0.075 – 2 MMBtu/hr).
This rule applies to any person who supplies, sells, offers for sale, installs, modifies, or solicits the installation or modification of any boiler, water heater, steam generator or process heater for use within the District with a rated heat input capacity greater than or equal to 75,000 British thermal units per hour up to and including 2,000,000 British thermal units per hour. The units subject to this rule are identified in Attachment 10.2. *(Permitted Equipment Combustion Equipment Requirements).*

Rule 361- Boilers, Steam Generators, and Process Heaters (Between 2 -5 MMBtu/hr).
This rule applies to any boiler, steam generator, or process heater with a rated heat input capacity greater than 2 million British thermal units per hour and less than 5 million British thermal units per hour. The units subject to this rule are identified in Attachment 10.2. *(Permitted Equipment Combustion Equipment Requirements).*

Rule 505 - Breakdown Conditions. This rule describes the procedures that UCSB must follow when a breakdown condition occurs to any emissions unit associated with the UCSB facility. A breakdown condition is defined as an unforeseeable failure or malfunction of (1) any air pollution control equipment or related operating equipment which causes a violation of an emission limitation or restriction prescribed in District Rules and Regulations, or by State law, or (2) any in-stack continuous monitoring equipment, provided such failure or malfunction:

a. Is not the result of neglect or disregard of any air pollution control law or rule or regulation;

b. Is not the result of an intentional or negligent act or omission on the part of the owner or operator;

c. Is not the result of improper maintenance;

d. Does not constitute a nuisance as defined in Section 41700 of the Health and Safety Code;

e. Is not a recurrent breakdown of the same equipment.

Rule 603 - Emergency Episode Plans: Section A of this rule requires the submittal of *Stationary Source Curtailment Plan* for all stationary sources that can be expected to emit more than 100 tons per year of hydrocarbons, nitrogen oxides, carbon monoxide or particulate matter. UCSB received approval of its Emergency Episode Plan on August 21, 2015.

Rule 810 - Federal Prevention of Significant Deterioration: This rule was adopted January 20, 2011 to incorporate the federal Prevention of Significant Deterioration rule requirements into the District's rules and regulations. Future projects at the facility will be evaluated to determine whether they constitute a new major stationary source or a major modification.

3.5. Compliance History

This section contains a summary of the compliance history for this facility since the issuance of the prior permit renewal and was obtained from documentation contained in the District's Administrative files.

3.5.1 *Facility Inspections*. Inspections of UCSB are conducted frequently for compliance with permit conditions and ongoing routine activities. A listing of the inspections of the UCSB for the past three years is too extensive to include in this permit but is available in the District files for this source.

3.5.2 This section contains a summary of all enforcement actions issued to this facility in the last three years. This facility is inspected on a routine basis.

VIOLATION TYPE	NUMBER	ISSUE DATE	DESCRIPTION OF VIOLATION	LOCATION OF VIOLATION
NOV	12176	1/31/2020	Failing to obtain a district permit when replacing the burners of DID# 388945, violating District Rule 201, 206 and Condition 9D.11 of PTO 13725-R1.	UCSB Stationary Source
NOV	12690	03/26/2021	Failing to conduct Differential Metering Testing on ten boiler fuel meters due to an employee being out on COVID leave during the scheduled calibration.	UCSB Stationary Source
NOV	12994	06/29/2022	Failing to tune two boilers (Device IDs 393267 and 393268) at least twice per year in 2021 in accordance with District 361 Tune-Up procedures.	UCSB Stationary Source
NOV	12995	06/30/2022	Failing to tune two boilers (Device IDs 393008 and 393011) in accordance with District 361 Tune-Up procedures.	UCSB Stationary Source
NOV	13549	12/06/2022	Failing to submit the Title V Permit Renewal Application 6 months before the date of permit expiration.	UCSB Stationary Source

Table 3.2: Generic Federally Enforceable District Rules

Generic Requirements	Affected Emission Units	Basis for Applicability	Adoption Date
RULE 101: Compliance by Existing Installations	All emission units	Emission of pollutants	June 1981
RULE 102: Definitions	All emission units	Emission of pollutants	August 25, 2016
RULE 103: Severability	All emission units	Emission of pollutants	October 23, 1978
RULE 105: Applicability	All emission units	Emission of pollutants	July 30, 1991
RULE 201: Permits Required	All emission units	Emission of pollutants	June 19, 2008
RULE 202: Exemptions to Rule 201	Applicable emission units	Insignificant activities/emissions, per size/rating/function	August 25, 2016
RULE 203: Transfer	All emission units	Change of ownership	April 17, 1997
RULE 204: Applications	All emission units	Addition of new equipment or modification to existing equipment.	August 25, 2016
RULE 205: Standards for Granting Permits	All emission units	Emission of pollutants	April 17, 1997
RULE 206: Conditional Approval of Authority to Construct or Permit to Operate	All emission units	Applicability of relevant Rules	October 15, 1991
RULE 208: Action on Applications – Time Limits	All emission units. Not applicable to Part 70 permit applications.	Addition of new equipment or modification to existing equipment.	April 17, 1997
RULE 212: Emission Statements	All emission units	Administrative	October 20, 1992
RULE 301: Circumvention	All emission units	Any pollutant emission	October 23, 1978
RULE 302: Visible Emissions	All emission units	Emissions that can injure, damage or offend.	June 1981
RULE 303: Nuisance	All emission units	Emissions that can injure, damage or offend.	October 23, 1978
RULE 305: Particulate Matter - Southern Zone	All emission units	Emissions that can injure, damage or offend.	October 23, 1978
RULE 307: Particulate Matter Emission Weight Rate - Southern Zone	All emission units	Emissions that can injure, damage or offend.	October 23, 1978
RULE 309: Specific Contaminants	All emission units	Emissions that can injure, damage or offend.	October 23, 1978
RULE 310: Odorous Organic Sulfides	All emission units	Emissions that can injure, damage or offend.	October 23, 1978

Generic Requirements	Affected Emission Units	Basis for Applicability	Adoption Date
RULE 311: Sulfur Content of Fuel	All combustion units	Use of fuel containing sulfur	October 23, 1978
RULE 315: Gasoline Specifications	Gasoline distributors, and sellers on UCSB	Emissions that can injure, damage or offend.	October 23, 1978
RULE 316: Storage and Transfer of Gasoline	Gasoline distributors, and sellers on UCSB	Emissions that can injure, damage or offend.	January 31, 2011
RULE 317: Organic Solvents	Materials containing organic solvents	Emissions that can injure, damage or offend.	October 23, 1978
RULE 318: Vacuum Producing Devices or Systems - Southern Zone	Vacuum Producing Devices or Systems	Emissions that can injure, damage or offend.	October 23, 1978
RULE 321.1: Solvent Cleaning Operations	Materials containing organic solvents	Emissions that can injure, damage or offend.	June 19, 2014
RULE 322: Metal Surface Coating Thinner and Reducer	Metal Surface Coating Operations.	Emissions that can injure, damage or offend.	October 23, 1978
RULE 323: Architectural Coatings	Architectural Coating Operations	Emissions that can injure, damage or offend.	November 15, 2011
RULE 323.1: Architectural Coatings	Architectural Coating Operations	Emissions that can injure, damage or offend.	June 19, 2014
RULE 324: Disposal and Evaporation of Solvents	Materials containing organic solvents	Emissions that can injure, damage or offend.	October 23, 1978
RULE 370: Potential to Emit - Limitations for Part 70 Sources	All emission units	Emission of pollutants	January 20, 2011
RULE 505: Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.	October 23, 1978
RULE 603: Emergency Episode Plans	Stationary sources with PTE greater than 100 tpy	UCSB Project PTE is greater than 100 tpy.	June 15, 1981
Rule 801: New Source Review – Definitions and General Requirements	All emission units	Emission of pollutants	August 25, 2016
Rule 802: New Source Review	All emission units	Emission of pollutants	August 25, 2016
Rule 804: Emission Offsets	All emission units	Emission of pollutants	August 25, 2016
Rule 805: Air Quality Impact and Modeling	All emission units	Emission of pollutants	August 25, 2016
Rule 806: Emission Reduction Credits	All emission units	Applications to generate ERC Certificates.	August 25, 2016

Generic Requirements	Affected Emission Units	Basis for Applicability	Adoption Date
Rule 810: Federal Prevention of Significant Deterioration (PSD)	All emission units	Emission of pollutants	June 20, 2013
Rule 901: New Source Performance Standards (NSPS)	All emission units	New or modified units	September 20, 2010
Rule 1301: General Information	All emission units	UCSB Project is a major source.	August 25, 2016
Regulation XIII (Rules 1302 – 1305): Part 70 Permitting	All emission units	UCSB Project is a major source.	November 9, 1993

Table 3.3: Unit Specific Federally Enforceable District Rules

Unit-Specific Requirements	Affected Emission Units	Basis for Applicability	Adoption Date
RULE 330: Surface Coating of Metal Parts and Products	Miscellaneous Units	Surface Coating of Metal Parts and Products	June 21, 2012
RULE 333: Control of Emissions from Reciprocating Internal Combustion Engines	See Attachment 10.3	ICE with rated brake horsepower greater than 50.	June 19, 2008
RULE 345: Control of Fugitive Dust from Construction and Demolition Activities	Miscellaneous Units	Fugitive Dust Emissions	January 21, 2010
RULE 349: Polyester Resin Operations	Polyester Resin Operations	Polyester Resin Operations	June 21, 2012
RULE 351: Surface Coating of Wood Products	Miscellaneous Units	Surface Coating of Wood Products	August 20, 1998
RULE 352: Natural Gas-Fired Fan-Type Central Furnaces and Small Water Heaters	Central Furnaces and Small Water Heaters	Central Furnaces and Small Water Heaters	October 20, 2011
RULE 353: Adhesives and Sealants	Miscellaneous Units	Adhesives and Sealants	June 21, 2012
RULE 354: Graphic Arts	Miscellaneous Units	VOC Limitations	June 28, 1994
RULE 360: Boilers, Water Heaters, and Process Heaters (0.075 – 2 MMBtu/hr)	See Attachment 10.2	Units greater than or equal to 0.75 MMBtu/hr and less than or equal to 2.0 MMBtu/hr.	March 15, 2018
RULE 361: Boilers, Steam Generators, and Process Heaters (Between 2 – 5 MMBtu/hr)	See Attachment 10.2	Units greater than 2.00 MMBtu/hr and less than 5.0 MMBtu/hr.	June 20, 2019

Table 3.4: Non-Federally Enforceable District Rules

Requirement	Affected Emission Units	Basis for Applicability	Adoption Date
RULE 210: Fees	All emission units	Administrative	March 17, 2005
RULES 501-504: Variance Rules	All emission units	Administrative	October 23, 1978
RULES 506-519: Variance Rules	All emission units	Administrative	October 23, 1978

4.0 ENGINEERING ANALYSIS

4.1. General

The engineering analyses performed for this permit were limited to the review of:

- Emission factors and calculation methods for each emissions unit
- Emission control equipment
- Emission source testing and sampling
- Process monitors needed to ensure compliance

4.2. Reciprocating Internal Combustion Engines

4.2.1 General: UCSB operates stationary diesel-fired internal combustion engines which provide power for electrical backup power in times of emergencies or fire suppression.

4.2.2 Emission Calculations: Mass emission estimates are based on the maximum allowed hours for maintenance and testing. Emissions are determined by the following equations:

E1, lb/day = Engine Rating (bhp) * EF (g/bhp-hr) * Daily Hours (hr/day) * (lb/453.6 g)
E2, tpy = Engine Rating (bhp) * EF (g/bhp-hr) * Annual Hours (hr/yr) * (lb/453.6 g) * (ton/2000 lb)

The emission factors (EF) were chosen based on each engine's rating and age. Unless engine specific data was provided, default emission factors are used as documented on the District's webpage at https://www.ourair.org/dice-atcm/. Emission factors are listed in Table 5.6 (*Emission Factors)*. Additionally, the engines are subject to daily and annual operating hour limits. Operating hour limits are listed in Table 5.5, *(Equipment Operating Description).*

Firewater Pumps. The firewater pump engines identified in this permit must comply with NFPA 25. Since the NFPA 25 does not specify an upper limit on the hours to comply with the maintenance and testing requirements, in-use firewater pumps do not have a defined potential to emit restricting their operation. The ATCM does require that the hours of operation be monitored with a non-resettable hour meter, that CARB Diesel Fuel be used (or approved alternative) and that detailed records of use be recorded and reported.

4.3 External Combustion Units

General: UCSB operates natural gas-fired combustion units (boilers and water heaters) which provide hot water and space heating needs throughout the facility. Daily emissions are calculated using the daily heat input (MMBtu/day) multiplied by the emission factor (lb/MMBtu). Annual emissions are calculated using the annual heat input (MMBtu/yr) times the emission factor (lb/MMBtu) divided by 2000 lb/ton. Emission factors are listed in Table 5.2 (Emission Factors).

4.4 Surface Coating Operations

General: The majority of coatings containing ROCs are applied to metal and wood surfaces in enclosed booths via paint sprayers, rollers and brushes. An automotive type spray booth is located at the paint shop in building 594 and a Paasche spray booth is located at the Theater and Dance West building 223. Filters on each booth provide some particulate matter and nuisance control. Exhaust makeup fans are used to provide airflow through the air booths. The spray booths are equipped with overspray filters. ROC emissions are controlled by using compliant coatings required by District Rules 323, 330 and 351. Some reduction in particulates is achieved via filters in each spray booth.

Emission Calculations: The current permitted emissions are 2.91 lb/day ROC. Daily permitted emissions are based on material data and usage rates originating from the SBCAPCD Engineering Evaluation for the 1989 issuance of PTO 7601. Detailed calculations can be found in Attachment 10.8.

The annual facility potential to emit was calculated by the following:

0.38 TPY = (2.91 lb/day) * (21.7 days/month) * (12 months/year) * (1 ton/2000 lb)

4.5 Gasoline Dispensing Facility

General: This facility stores and dispenses fuel from two above-ground storage tanks (AST). The dispensing facility at building 555 has a 500 gallon above-ground storage tank and fuel dispenser for marine vessels. Vapors (ROCs) are controlled by a balance type vapor recovery system (VRS), Phase I only. A larger dispensing facility is located at building 336 with a 6,000 gallon above-ground storage tank and two fuel dispensers for vehicles. Vapors from this dispensing facility are controlled using Phase I enhanced vapor recover (EVR) with attached Phase II vapor recovery system (VRS) for the two nozzles and a Standing Loss Control system.

Emission Calculations: Emission calculations are based on gasoline throughput and standard District emission factors for loading, breathing, refueling, and spillage losses. Detailed calculations can be found in Attachment 10.7.

4.6 Process Monitoring

In many instances, ongoing compliance beyond a single snap shot (source test) is assessed by the use of process monitoring systems. Once these process monitors are in place, it is important that they be well maintained and calibrated to ensure that the required accuracy and precision of the devices are within specifications. The only applicable processing requirements are fuel use monitoring and IC engine operational hour meters.

4.6.1 *External Combustion Units*. The volume of fuel gas used in the external combustion units is determined by fuel meter or hours of operation (hrs times heat input rating divided by heating value of the fuel). Alternatively, the permittee has the option of using the *Default Method* (the volume of natural gas fuel used is reported as permitted annual heat input limit for the unit). The specific fuel monitoring method for each unit is listed in Attachment 10.2 *(External Combustion Equipment Operational Requirements).*

4.6.2 *Internal Combustion Engines*. Non-resettable hour meters are required on each internal combustion engine to monitor operational hours.

4.7 Best Available Control Technology (BACT)

4.7.1 *External Combustion Units.* Devices subject to BACT requirements are listed in Table 4.1 below. These boilers are equipped with low-NOx burners certified to meet the required ppmv NOx at 3% O2. BACT was required due to UCSB claiming the Rule 802.B.2 offset exemption for the replacement of failed boilers throughout the facility with Devices #391529, #393593, #393594, 393008, #393011, #393012, #394908, #394910, #395683, and #395684. The other devices listed are subject to BACT since their project exceeded Rule 802 BACT thresholds. The following BACT measures apply to these boilers:

Table 4.1: External Combustion BACT

Emission Unit/Process	Control Technology	Pollutant	Performance Standard [a]
Device #388933	Low-NO_x Gas Burner	NO_X CO	20 ppmvd at 3% O_2 50 ppmvd at 3% O_2
Device #388935	Low-NO_x Gas Burner	NO_X CO	20 ppmvd at 3% O_2 50 ppmvd at 3% O_2
Device #388936	Low-NO_x Gas Burner	NO_X CO	20 ppmvd at 3% O_2 50 ppmvd at 3% O_2
Device #388937	Low-NO_x Gas Burner	NO_X CO	20 ppmvd at 3% O_2 50 ppmvd at 3% O_2
Device #388938	Low-NO_x Gas Burner	NO_X CO	20 ppmvd at 3% O_2 50 ppmvd at 3% O_2
Device #388939	Low-NO_x Gas Burner	NO_X CO	20 ppmvd at 3% O_2 50 ppmvd at 3% O_2
Device #388940	Low-NO_x Gas Burner	NO_X CO	20 ppmvd at 3% O_2 50 ppmvd at 3% O_2
Device #388941	Low-NO_x Gas Burner	NO_X CO	20 ppmvd at 3% O_2 50 ppmvd at 3% O_2

Device #391529	Low-NO_x Gas Burner	NO_X CO	20 ppmvd at 3% O_2 100 ppmvd at 3% O_2
Device #393008	Low-NO_x Gas Burner	NO_X CO	12 ppmvd at 3% O_2 100 ppmvd at 3% O_2
Device #393011	Low-NO_x Gas Burner	NO_X CO	12 ppmvd at 3% O_2 100 ppmvd at 3% O_2
Device #393012	Low-NO_x Gas Burner	NO_X CO	12 ppmvd at 3% O_2 100 ppmvd at 3% O_2
Device #393593	Low-NO_x Gas Burner	NO_X CO	12 ppmvd at 3% O_2 100 ppmvd at 3% O_2
Device #393594	Low-NO_x Gas Burner	NO_X CO	12 ppmvd at 3% O_2 100 ppmvd at 3% O_2
Device #394908	Low-NOx Gas Burner	NOx CO	9 ppmvd at 3% O_2 100 ppmvd at 3% O_2
Device #394910	Low-NOx Gas Burner	NOx CO	9 ppmvd at 3% O_2 100 ppmvd at 3% O_2
Device #395683	Low-NOx Gas Burner	NOx CO	12 ppmvd at 3% O_2 100 ppmvd at 3% O_2
Device #395684	Low-NOx Gas Burner	NOx CO	12 ppmvd at 3% O_2 100 ppmvd at 3% O_2

Table Notes:

(a) The performance standards vary as BACT standards are different for various boiler sizes and have changed over time. A boiler's BACT standards will remain as they were upon its original issuance.

4.7.2 *Internal Combustion Engines*. Device #388947 at the Bioengineering building #512 is subject to BACT requirements. Emissions are controlled by using a Turbocharged/After-cooled Tier 2 certified engine. The combined emissions from the project, which included installation of this generator and several boilers under ATC 14815 triggered BACT requirements for NOx.

Table 4.2: Internal Combustion Engine BACT

Emission Unit/Process	Control Technology	Pollutant	Performance Standard
Device #388947	Turbocharged/After-cooled Tier 2 certified engine	NO_x	4.50 g/bhp-hr NOx emission factor

Table Notes:

(a) NO_x as NO_2, SO_x as SO_2, lb/day = pounds per day, tpy = tons per year.
(b) Device ID # from permit equipment list.
(c) Emission data that round down to 0.00 has been set to a default of 0.01.

4.8 Source Testing/Tuning/Sampling

4.8.1 *Source Testing - External Combustion Equipment*. No specific external combustion units are required to be source tested on a regular basis. However, the District may, at its discretion, require any owner or operator of any unit subject to Rule 361 to perform a source test. Table 4.1 below details the pollutants, parameters and methods for testing. UCSB is required to follow the District *Source Test Procedures Manual* (May 24, 1990 and all updates) for all units required to be tested.

4.8.2 *VRS Compliance Testing.* Testing of each gasoline tank's vapor recovery system is required on a routine basis as described in permit condition 9.C.4(c). Test procedures are summarized in Attachment 10.4 *(Vapor Recovery System Testing Requirements).*

4.8.3 *Rule 361 Tuning Procedures.* External combustion units subject to this rule are subject to the tuning requirements of the rule. Tune-ups must be performed at least twice every 12 months in accordance with the tuning procedures listed in Attachment 1 to Rule 361. Additionally, new *stacked* Rule 360 units that combined exceed the heat input exemption threshold must be tuned once per year. The units that require tuning per this rule are listed in Attachment 10.2 *(External Combustion Equipment Operational Requirements).*

4.8.4 *Sampling Requirements*. There are no sampling requirements for the equipment subject to this permit.

Table 4.3: Source Testing Requirements for the External Combustion Units

Emission & Limit Test Points	Pollutants	Parameters	Test Methods [a]
External Combustion Unit Stacks [b][c][d][e]	NO_x	ppmv, lb/hr	EPA Method 7E, ARB 100
	CO	ppmv, lb/hr	EPA Method 10, ARB 100
	ROC	ppmv, lb/hr	EPA Method 18
	Sampling Point Det.		EPA Method 1
	Stack Gas Flow Rate		EPA Method 2 or 19
	O_2, CO_2, Dry MW		EPA Method 3
	Moisture Content		EPA Method 4
	Stack Temperature	°F	Calibrated Thermocouple
Fuel Gas [h]	Fuel Gas Flow Rate		Fuel Gas Meter [f]
	Higher Heating Value	Btu/lb	ASTM D 1826 or 3588
	Total Sulfur Content	ppmw	ASTM D 1072 or 5504 [g]
	Gas Composition	CHONS%, F-factor	ASTM 1945

Notes:

(a) Alternative methods may be acceptable on a case-by-case basis.
(b) The emission rates shall be based on EPA Methods 2 and 4, or Method 19 along with the heat input rate.
(c) For NO_x, CO and ROC and O_2 a minimum of three 40-minute runs shall be obtained during each test.
(d) See Tables 1 and 2 for the emission standards to be measured against during the test. Measured NO_x and CO shall not exceed the limit specified in the applicable Rule (e.g., Rule 361, Rule 342).
(e) All emission determinations shall be made in the as-found operating condition, at the maximum attainable firing rate to be approved by the source test plan. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer.
(f) Fuel meter shall meet the calibration requirements prior to testing.
(g) Total sulfur content fuel samples shall be obtained using EPA Method 18 with Tedlar Bags (or equivalent) equipped with Teflon tubing and fittings. Turnaround time for laboratory analysis of these samples shall be no more than 24 hours from sampling.
(h) Fuel gas heating value and composition are optional for Rule 361 applicable units. Sulfur content only required for units not run on utility purchased gas. For units rated at 5 MMBtu/hr or greater, heating value is required in all cases, but gas composition not required if Method 2 is used for stack flow.

4.9 Part 70 Engineering Review: Hazardous Air Pollutant Emissions

Hazardous air pollutant (HAP) emissions for UCSB are calculated based on various HAP emission factors and the permitted operational limits and maximum facility design throughputs of this permit. HAP emission factors are shown in Table 5.11. Equipment specific estimated annual HAP emissions, based on the worst-case scenarios listed in Tables 5.1, 5.5, 5.16 and 5.17 of this permit, are shown in Tables 5.12 through 5.14. Total stationary source estimated annual HAP emissions are summarized in Table 5.15. These totals are estimates only, they are not limitations.

4.9.1 Emission Factors for HAP Potential Emissions:

Natural gas fired external combustion units: The HAP emission factors for natural gas fired external combustion equipment (boilers, water heaters, etc.) were obtained from the Ventura County Air Pollution Control District's *AB2588 Combustion Emission Factors* (2001) Natural Gas Fired External Combustion Equipment table for units less than 10 MMBtu/hr, and USEPA's AP-42 Table 1.4-4, *Emission Factors for Metals from Natural Gas Combustion* (1998). Additionally, the lead emission factors were obtained from USEPA's AP-42 Table 1.4-2, *Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion* (1998).

Diesel fired IC engines: The HAP emission factors for diesel fired IC engines were obtained from the Ventura County Air Pollution Control District's *AB2588 Combustion Emission Factors* (2001) Diesel Combustion Factors table for internal combustion. A conservative brake specific fuel consumption of 7,800 Btu/bhp-hr was assumed for all engines.

Gasoline dispensing/storage: The HAP emission factors for gasoline dispensing and storage were obtained from the District's *Gasoline Station Health Risk Assessment Application Form-25T* (2022), Table A2 of Attachment A: ROC and Benzene Emissions.

Coating and solvent usage: HAP emission factors for coating and solvent usage were based on the District's default assumption that the coatings/solvents contain 5% benzene, 5% toluene and 5% xylenes. These HAP emissions will be updated in the next PTO reevaluation after the emission calculations for 2018 are finalized under the AB 2588 program.

5.0 Emissions

Permitted emissions for each emissions unit are based on the equipment's potential-to-emit (as defined by Rule 102). Section 5.1 identifies the pollutants for which each emissions unit was analyzed. Section 5.2 identifies the emission units and emission tables, and section 5.3, greenhouse gas emissions determination methodology. In order to accurately track the emissions from a facility, the District uses a computer database.

5.1. Permitted Emission Limits - Emission Units

Each emissions unit associated with the facility was analyzed to determine the potential-to-emit for the following pollutants:

- Nitrogen Oxides (NO_x) [1]
- Reactive Organic Compounds (ROC)
- Carbon Monoxide (CO)
- Sulfur Oxides (SO_x) [2]
- Particulate Matter (PM) [3]
- Particulate Matter smaller than 10 microns (PM_{10})
- Particulate Matter smaller than 2.5 microns ($PM_{2.5}$)
- Greenhouse Gases (as CO_2)

5.2. Permitted Emission Limits - Facility Totals

Permitted emissions are calculated for both short term (daily) and long term (annual) time periods. Section 4.0 (Engineering Analysis) provides a general discussion of the basic calculation methodologies and emission factors used. The reference documentation for the specific emission calculations, as well as detailed calculation spreadsheets, are provided in Section 4. Tables 5.1 through 5.4 provide the basic operating characteristics, emission factors and emissions for the external combustion equipment. Tables 5.5 through 5.8 provide the basic operating characteristics, emission factors and emissions for the internal combustion engines. Table 5.9 provides the total permitted short-term and permitted long-term emissions.

Daily Scenario:

- Internal Combustion Engines
- External Combustion Equipment
- Gasoline Tanks
- Coating Operations

Annual Scenario:

- Internal Combustion Engines
- External Combustion Equipment
- Gasoline Tanks
- Coating Operations

[1] Calculated and reported as nitrogen dioxide (NO_2)
[2] Calculated and reported as sulfur dioxide (SO_2)
[3] Calculated and reported as all particulate matter smaller than 100 μm

5.3 Greenhouse Gases

GHG emissions from combustion sources are calculated using emission factors found in Tables C-1 and C-2 of 40 CFR Part 98 and global warming potentials found in Table A-1 of 40 CFR Part 98. CO_2 equivalent emission factors are calculated for CO_2, CH_4, and N_2O individually, then summed to calculate a total CO_2e emission factor. Annual CO_2e emission totals are presented in short tons.

For IC engines, the emission factor in lb/MMBtu heat input is converted to g/bhp-hr output based on a standard brake-specific fuel consumption.

For natural gas combustion the emission factor is:

(53.02 kg CO_2/MMBtu) (2.2046 lb/kg) = 116.89 lb CO_2/MMBtu
(0.001 kg CH_4/MMBtu) (2.2046 lb/kg)(21 lb CO_{2e}/lb CH_4) = 0.046 lb CO_{2e}/MMBtu
(0.0001 kg N_2O/MMBtu) (2.2046 lb/kg)(310 lb CO_{2e}/lb N2O) = 0.068 lb CO_{2e}/MMBtu
Total CO_{2e}/MMBtu = 116.89 + 0.046 + 0.068 = 117.00 lb CO_{2e}/MMBtu

For diesel fuel combustion the emission factor is:

(73.96 kg CO_2/MMBtu) (2.2046 lb/kg) = 163.05 lb CO_2/MMBtu
(0.003 kg CH_4/MMBtu) (2.2046 lb/kg)(21 lb CO_{2e}/lb CH_4) = 0.139 lb CO_{2e}/MMBtu
(0.0006 kg N_2O/MMBtu) (2.2046 lb/kg)(310 lb CO_{2e}/lb N2O) = 0.410 lb CO_{2e}/MMBtu
Total CO_{2e}/MMBtu = 163.05 + 0.139 + 0.410 = 163.60 lb CO_{2e}/MMBtu

Converted to g/hp-hr:

(163.60 lb CO_{2e}/MMBtu)(453.6 g/lb)(7500 Btu/hp-hr)/1,000,000 = 556.58 g/hp-hr as CO_{2e}

5.4 Part 70: HAP Potential to Emit Emission Estimates

Estimated emissions of hazardous air pollutants are computed for informational purposes only. HAP emission factors are shown in Table 5.11. Equipment specific estimated annual HAP emissions are shown in Tables 5.12, 5.13 and 5.14. Total stationary source estimated annual HAP emissions are summarized in Table 5.15.

Table 5.1: Operating Equipment Description - External Combustion

Building	Operator ID	Device ID	Fuel Type	Rating (MMBtu/hr)	Limit (MMBtu/day)	Limit (MMBtu/qtr)	Limit (MMBtu/yr)	HHV (Btu/scf)	Sulfur (ppmv S)
Bldg. 221	Boiler #B1	114076	NG	2.070	49.680	4,533	18,133	1,050	80.00
Bldg. 225	Boiler #B1	388327	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 225	Boiler #B2	388328	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 225	Boiler #B3	388329	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 235	Boiler #B1	394764	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 235	Boiler B2	393445	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 266	Boiler B1	393026	NG	2.000	48.000	4,380	18,980	1,050	80.00
Bldg. 266	Boiler B2	393027	NG	2.000	48.000	4,380	18,980	1,050	80.00
Bldg. 266	Boiler #B3	114063	NG	3.250	78.000	7,118	18,980	1,050	80.00
Bldg. 276	Boiler #B1	114128	NG	2.270	54.480	4,971	19,885	1,050	80.00
Bldg. 276	Boiler #B2	114129	NG	2.270	54.480	4,971	19,885	1,050	80.00
Bldg. 479	Boiler #B1	114112	NG	3.000	72.000	6,570	26,280	1,050	80.00
Bldg. 479	Boiler #B2	114113	NG	3.000	72.000	6,570	26,280	1,050	80.00
Bldg. 503	Boiler #B1	388948	NG	1.460	35.040	3,197	12,790	1,050	80.00
Bldg. 503	Boiler B2	386140	NG	1.500	36.000	3,285	13,140	1,050	80.00
Bldg. 503	Boiler B3	386141	NG	1.500	36.000	3,285	13,140	1,050	80.00
Bldg. 503	Boiler B4	386142	NG	1.500	36.000	3,285	13,140	1,050	80.00
Bldg. 503	Boiler B5	386143	NG	1.500	36.000	3,285	13,140	1,050	80.00
Bldg. 503	Boiler B6	386144	NG	1.500	36.000	3,285	13,140	1,050	80.00
Bldg. 503	Boiler B7	386145	NG	1.500	36.000	3,285	13,140	1,050	80.00
Bldg. 505	Boiler #B1	393029	NG	1.450	34.800	3,176	12,702	1,050	80.00
Bldg. 505	Boiler #B2	393030	NG	1.450	34.800	3,176	12,702	1,050	80.00
Bldg. 512	Boiler #B1	394908	NG	4.000	96.000	8,760	35,040	1,050	80.00
Bldg. 512	Boiler #B2	394910	NG	4.000	96.000	8,760	35,040	1,050	80.00
Bldg. 512	Boiler #B6	388933	NG	0.398	9.552	872	3,486	1,050	80.00
Bldg. 512	Boiler #B7	388935	NG	0.398	9.552	872	3,486	1,050	80.00
Bldg. 512	Boiler #B8	388936	NG	0.398	9.552	872	3,486	1,050	80.00
Bldg. 512	Boiler #B9	388937	NG	0.398	9.552	872	3,486	1,050	80.00
Bldg. 512	Boiler #B10	388938	NG	0.398	9.552	872	3,486	1,050	80.00
Bldg. 512	Boiler #B11	388939	NG	0.398	9.552	872	3,486	1,050	80.00
Bldg. 512	Boiler #B12	388940	NG	0.398	9.552	872	3,486	1,050	80.00
Bldg. 512	Boiler #B13	388941	NG	0.398	9.552	872	3,486	1,050	80.00
Bldg. 515	Boiler #B1	114092	NG	2.500	60.000	5,475	21,900	1,050	80.00
Bldg. 515	Boiler #B2	114093	NG	2.500	60.000	5,475	21,900	1,050	80.00

Building	Operator ID	Device ID	Fuel Type	Rating (MMBtu/hr)	Limit (MMBtu/day)	Limit (MMBtu/qtr)	Limit (MMBtu/yr)	HHV (Btu/scf)	Sulfur (ppmv S)
Bldg. 515	Boiler #B3	114094	NG	2.500	60.000	5,475	21,900	1,050	80.00
Bldg. 516	Boiler #B5	393622	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 516	Boiler #B6	363623	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 516	Boiler #B7	393624	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 520	Boiler #B1	114084	NG	4.600	110.400	10,074	40,296	1,050	80.00
Bldg. 521	Boiler #B1	114085	NG	2.970	71.280	6,504	26,017	1,050	80.00
Bldg. 525	Boiler #B1	393439	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 525	Boiler #B2	393440	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 526	Boiler #B1	387978	NG	1.410	33.840	3,088	12,352	1,050	80.00
Bldg. 526	Boiler #B2	387979	NG	1.410	33.840	3,088	12,352	1,050	80.00
Bldg. 528	Boiler #B1	393266	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 528	Boiler #B2	387629	NG	1.500	36.000	3,285	13,140	1,050	80.00
Bldg. 533	Boiler #B1	387980	NG	1.900	45.600	4,161	16,644	1,050	80.00
Bldg. 533	Boiler #B2	387981	NG	1.900	45.600	4,161	16,644	1,050	80.00
Bldg. 533	Boiler #B3	387983	NG	1.900	45.600	4,161	16,644	1,050	80.00
Bldg. 533	Boiler #B4	387982	NG	1.900	45.600	4,161	16,644	1,050	80.00
Bldg. 534	Boiler B-1	114710	NG	2.970	71.280	6,504	26,017	1,050	80.00
Bldg. 534	Boiler #B-2	114711	NG	2.970	71.280	6,504	26,017	1,050	80.00
Bldg. 534	Boiler B1	393444	NG	2.600	62.400	5,694	22,776	1,050	80.00
Bldg. 535	Boiler #B1	114109	NG	3.000	72.000	6,570	26,280	1,050	80.00
Bldg. 542	Boiler B-1	114712	NG	1.300	31.200	2,847	11,388	1,050	80.00
Bldg. 542	Boiler B-2	114713	NG	1.300	31.200	2,847	11,388	1,050	80.00
Bldg. 544	Boiler #B1	114079	NG	2.600	62.400	5,694	22,776	1,050	80.00
Bldg. 544	Boiler #B2	114080	NG	2.600	62.400	5,694	22,776	1,050	80.00
Bldg. 549	Boiler #B1	393267	NG	2.940	70.560	6,439	25,754	1,050	80.00
Bldg. 549	Boiler #B2	393268	NG	2.940	70.560	6,439	25,754	1,050	80.00
Bldg. 551	Boiler B1	393269	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 551	Boiler B2	393270	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 552	Boiler #B1	393593	NG	1.536	36.864	3,364	13,455	1,050	80.00
Bldg. 552	Boiler #B2	393594	NG	1.536	36.864	3,364	13,455	1,050	80.00
Bldg. 553	Boiler #B1	393625	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 553	Boiler #B2	393626	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 554	Boiler #B1	393442	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 554	Boiler #B2	393443	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 558	Boiler #B1	393447	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 558	Boiler #B2	393448	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg 560	Boiler #B2	387971	NG	1.500	36.000	3,285	13,140	1,050	80.00

Building	Operator ID	Device ID	Fuel Type	Rating (MMBtu/hr)	Limit (MMBtu/day)	Limit (MMBtu/qtr)	Limit (MMBtu/yr)	HHV (Btu/scf)	Sulfur (ppmv S)
Bldg. 560	Boiler #B1	393441	NG	3.120	74.880	6,833	27,331	1,050	80.00
Bldg. 561	Boiler #B1	114131	NG	1.530	36.720	3,351	13,403	1,050	80.00
Bldg. 561	Boiler #B2	114132	NG	1.530	36.720	3,351	13,403	1,050	80.00
Bldg. 562	Boiler B6	391529	NG	1.500	36.000	3,285	13,140	1,050	80.00
Bldg. 562	Boiler B1	114251	NG	1.680	40.320	3,679	14,717	1,050	80.00
Bldg. 562	Boiler B2	114252	NG	1.68	40.32	3679.2	14716.8	1050	80
Bldg. 562	Boiler B3	395683	NG	1.5	36	3285	13140	1050	80
Bldg. 562	Boiler B2	395684	NG	1.5	36	3285	13140	1050	80
Bldg. 563	Boiler #B1	114124	NG	4.600	110.400	10,074	40,296	1,050	80.00
Bldg. 563	Boiler #B2	114125	NG	4.600	110.400	10,074	40,296	1,050	80.00
Bldg. 564	Boiler #B1	114110	NG	2.100	50.400	4,599	18,396	1,050	80.00
Bldg. 571	Boiler #B1	114135	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 571	Boiler #B2	114136	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 571	Boiler #B3	114137	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 571	Boiler #B4	114138	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 588	Boiler #B1	114127	NG	2.160	51.840	4,730	18,922	1,050	80.00
Bldg. 588	Boiler #B2	393200	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 615	Boiler #B1	393446	NG	2.500	60.000	5,475	21,900	1,050	80.00
Bldg. 657	Boiler #B1	394662	NG	3.900	93.600	8,541	34,164	1,050	80.00
Bldg. 657	Boiler #B2	386829	NG	2.000	48.000	4,380	17,520	1,050	80.00
Bldg. 860	Boiler B-1	393008	NG	1.500	36.000	3,285	13,140	1,050	80.00
Bldg. 860	Boiler B-2	393011	NG	1.500	36.000	3,285	13,140	1,050	80.00
Bldg. 860	Boiler B-3	393012	NG	1.500	36.000	3,285	13,140	1,050	80.00

Table 5.2: Emission Factors - External Combustion

Building	Operator ID	Device ID	Nox (lb/MMBtu)	ROC (lb/MMBtu)	CO (lb/MMBtu)	Sox (lb/MMBtu)	PM (lb/MMBtu)	PM10 (lb/MMBtu)	PM2.5 (lb/MMBtu)	GHG (lb/MMBtu)
Bldg. 221	Boiler #B1	114076	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 225	Boiler #B1	388327	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 225	Boiler #B2	388328	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 225	Boiler #B3	388329	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 235	Boiler #B1	394764	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 235	Boiler B2	393445	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 266	Boiler B1	393026	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 266	Boiler B2	393027	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 266	Boiler #B3	114063	0.1035	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 276	Boiler #B1	114128	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 276	Boiler #B2	114129	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 479	Boiler #B1	114112	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 479	Boiler #B2	114113	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 503	Boiler #B1	388948	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 503	Boiler B2	386140	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 503	Boiler B3	386141	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 503	Boiler B4	386142	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 503	Boiler B5	386143	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 503	Boiler B6	386144	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 503	Boiler B7	386145	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 505	Boiler #B1	393029	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 505	Boiler #B2	393030	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00

Building	Operator ID	Device ID	Nox (lb/MMBtu)	ROC (lb/MMBtu)	CO (lb/MMBtu)	Sox (lb/MMBtu)	PM (lb/MMBtu)	PM10 (lb/MMBtu)	PM2.5 (lb/MMBtu)	GHG (lb/MMBtu)
Bldg. 512	Boiler #B1	394908	0.011	0.0054	0.074	0.0136	0.0075	0.0075	0.0075	117.00
Bldg. 512	Boiler #B2	394910	0.011	0.0054	0.074	0.0136	0.0075	0.0075	0.0075	117.00
Bldg. 512	Boiler #B6	388933	0.024	0.0054	0.037	0.0136	0.0075	0.0075	0.0075	117.00
Bldg. 512	Boiler #B7	388935	0.024	0.0054	0.037	0.0136	0.0075	0.0075	0.0075	117.00
Bldg. 512	Boiler #B8	388936	0.024	0.0054	0.037	0.0136	0.0075	0.0075	0.0075	117.00
Bldg. 512	Boiler #B9	388937	0.024	0.0054	0.037	0.0136	0.0075	0.0075	0.0075	117.00
Bldg. 512	Boiler #B10	388938	0.024	0.0054	0.037	0.0136	0.0075	0.0075	0.0075	117.00
Bldg. 512	Boiler #B11	388939	0.024	0.0054	0.037	0.0136	0.0075	0.0075	0.0075	117.00
Bldg. 512	Boiler #B12	388940	0.024	0.0054	0.037	0.0136	0.0075	0.0075	0.0075	117.00
Bldg. 512	Boiler #B13	388941	0.024	0.0054	0.037	0.0136	0.0075	0.0075	0.0075	117.00
Bldg. 515	Boiler #B1	114092	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 515	Boiler #B2	114093	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 515	Boiler #B3	114094	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 516	Boiler #B5	393622	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 516	Boiler #B6	363623	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 516	Boiler #B7	393624	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 520	Boiler #B1	114084	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 521	Boiler #B1	114085	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 525	Boiler #B1	393439	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 525	Boiler #B2	393440	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 526	Boiler #B1	387978	0.098	0.0054	0.082	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 526	Boiler #B2	387979	0.098	0.0054	0.082	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 528	Boiler #B1	393266	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00

Building	Operator ID	Device ID	Nox (lb/MMBtu)	ROC (lb/MMBtu)	CO (lb/MMBtu)	Sox (lb/MMBtu)	PM (lb/MMBtu)	PM10 (lb/MMBtu)	PM2.5 (lb/MMBtu)	GHG (lb/MMBtu)
Bldg. 528	Boiler #B2	387629	0.098	0.0054	0.082	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 533	Boiler #B1	387980	0.098	0.0054	0.082	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 533	Boiler #B2	387981	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 533	Boiler #B3	387983	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 533	Boiler #B4	387982	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 534	Boiler B-1	114710	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 534	Boiler #B-2	114711	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 534	Boiler B1	393444	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 535	Boiler #B1	114109	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 542	Boiler B-1	114712	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 542	Boiler B-2	114713	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 544	Boiler #B1	114079	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 544	Boiler #B2	114080	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 549	Boiler #B1	393267	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 549	Boiler #B2	393268	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 551	Boiler B1	393269	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 551	Boiler B2	393270	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 552	Boiler #B1	393593	0.014	0.0054	0.074	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 552	Boiler #B2	393594	0.014	0.0054	0.074	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 553	Boiler #B1	393625	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 553	Boiler #B2	393626	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 554	Boiler #B1	393442	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 554	Boiler #B2	393443	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00

Building	Operator ID	Device ID	Nox (lb/MMBtu)	ROC (lb/MMBtu)	CO (lb/MMBtu)	Sox (lb/MMBtu)	PM (lb/MMBtu)	PM10 (lb/MMBtu)	PM2.5 (lb/MMBtu)	GHG (lb/MMBtu)
Bldg. 558	Boiler #B1	393447	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 558	Boiler #B2	393448	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg 560	Boiler #B2	387971	0.098	0.0054	0.082	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 560	Boiler #B1	393441	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 561	Boiler #B1	114131	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 561	Boiler #B2	114132	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 562	Boiler B6	391529	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 562	Boiler B1	114251	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 562	Boiler B2	114252	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117
Bldg. 562	Boiler B3	395683	0.0146	0.0054	0.0741	0.0137	0.0075	0.0075	0.0075	117
Bldg. 562	Boiler B2	395684	0.0146	0.0054	0.0741	0.0137	0.0075	0.0075	0.0075	117
Bldg. 563	Boiler #B1	114124	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 563	Boiler #B2	114125	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 564	Boiler #B1	114110	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 571	Boiler #B1	114135	0.024	0.0054	0.074	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 571	Boiler #B2	114136	0.024	0.0054	0.074	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 571	Boiler #B3	114137	0.024	0.0054	0.074	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 571	Boiler #B4	114138	0.024	0.0054	0.074	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 588	Boiler #B1	114127	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 588	Boiler #B2	393200	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 615	Boiler #B1	393446	0.036	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 657	Boiler #B1	394662	0.036	0.0054	0.2970	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 657	Boiler #B2	386829	0.024	0.0054	0.297	0.0137	0.0075	0.0075	0.0075	117.00

Building	Operator ID	Device ID	Nox (lb/MMBtu)	ROC (lb/MMBtu)	CO (lb/MMBtu)	Sox (lb/MMBtu)	PM (lb/MMBtu)	PM10 (lb/MMBtu)	PM2.5 (lb/MMBtu)	GHG (lb/MMBtu)
Bldg. 860	Boiler B-1	393008	0.0146	0.0054	0.0741	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 860	Boiler B-2	393011	0.0146	0.0054	0.0741	0.0137	0.0075	0.0075	0.0075	117.00
Bldg. 860	Boiler B-3	393012	0.0146	0.0054	0.0741	0.0137	0.0075	0.0075	0.0075	117.00

Table 5.3: Short Term Potential to Emit - External Combustion

Building	Operator ID	Device ID	NOx (lb/hr)	ROC (lb/hr)	CO (lb/hr)	SOx (lb/hr)	PM (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	GHG (lb/hr)	NOx (lb/day)	ROC (lb/day)	CO (lb/day)	SOx (lb/day)	PM (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	GHG (lb/day)
Bldg. 221	Boiler #B1	114076	0.20	0.01	0.17	0.03	0.02	0.02	0.02	242.19	4.87	0.27	4.09	0.68	0.37	0.37	0.37	5812.56
Bldg. 225	Boiler #B1	388327	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 225	Boiler #B2	388328	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 225	Boiler #B3	388329	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 235	Boiler #B1	394764	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 235	Boiler B2	393445	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 266	Boiler B1	393026	0.07	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.73	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 266	Boiler B2	393027	0.07	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.73	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 266	Boiler #B3	114063	0.34	0.02	0.27	0.04	0.02	0.02	0.02	380.25	8.07	0.42	6.43	1.07	0.59	0.59	0.59	9126.00
Bldg. 276	Boiler #B1	114128	0.08	0.01	0.67	0.03	0.02	0.02	0.02	265.59	1.96	0.29	16.18	0.75	0.41	0.41	0.41	6374.16
Bldg. 276	Boiler #B2	114129	0.08	0.01	0.67	0.03	0.02	0.02	0.02	265.59	1.96	0.29	16.18	0.75	0.41	0.41	0.41	6374.16
Bldg. 479	Boiler #B1	114112	0.11	0.02	0.89	0.04	0.02	0.02	0.02	351.00	2.59	0.39	21.38	0.99	0.54	0.54	0.54	8424.00
Bldg. 479	Boiler #B2	114113	0.11	0.02	0.89	0.04	0.02	0.02	0.02	351.00	2.59	0.39	21.38	0.99	0.54	0.54	0.54	8424.00
Bldg. 503	Boiler #B1	388948	0.04	0.01	0.43	0.02	0.01	0.01	0.01	170.82	0.84	0.19	10.41	0.48	0.26	0.26	0.26	4099.68
Bldg. 503	Boiler B2	386140	0.04	0.01	0.45	0.02	0.01	0.01	0.01	175.50	0.86	0.19	10.69	0.49	0.27	0.27	0.27	4212.00
Bldg. 503	Boiler B3	386141	0.04	0.01	0.45	0.02	0.01	0.01	0.01	175.50	0.86	0.19	10.69	0.49	0.27	0.27	0.27	4212.00
Bldg. 503	Boiler B4	386142	0.04	0.01	0.45	0.02	0.01	0.01	0.01	175.50	0.86	0.19	10.69	0.49	0.27	0.27	0.27	4212.00
Bldg. 503	Boiler B5	386143	0.04	0.01	0.45	0.02	0.01	0.01	0.01	175.50	0.86	0.19	10.69	0.49	0.27	0.27	0.27	4212.00
Bldg. 503	Boiler B6	386144	0.04	0.01	0.45	0.02	0.01	0.01	0.01	175.50	0.86	0.19	10.69	0.49	0.27	0.27	0.27	4212.00
Bldg. 503	Boiler B7	386145	0.04	0.01	0.45	0.02	0.01	0.01	0.01	175.50	0.86	0.19	10.69	0.49	0.27	0.27	0.27	4212.00

Building	Operator ID	Device ID	NOx (lb/hr)	ROC (lb/hr)	CO (lb/hr)	SOx (lb/hr)	PM (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	GHG (lb/hr)	NOx (lb/day)	ROC (lb/day)	CO (lb/day)	SOx (lb/day)	PM (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	GHG (lb/day)
Bldg. 505	Boiler #B1	393029	0.03	0.01	0.43	0.02	0.01	0.01	0.01	169.65	0.84	0.19	10.34	0.48	0.26	0.26	0.26	4071.60
Bldg. 505	Boiler #B2	393030	0.03	0.01	0.43	0.02	0.01	0.01	0.01	169.65	0.84	0.19	10.34	0.48	0.26	0.26	0.26	4071.60
Bldg. 512	Boiler #B1	394908	0.04	0.02	0.30	0.05	0.03	0.03	0.03	468.00	1.06	0.52	7.10	1.31	0.72	0.72	0.72	11232.00
Bldg. 512	Boiler #B2	394910	0.04	0.02	0.30	0.05	0.03	0.03	0.03	468.00	1.06	0.52	7.10	1.31	0.72	0.72	0.72	11232.00
Bldg. 512	Boiler #B6	388933	0.01	0.00	0.01	0.01	0.00	0.00	0.00	46.57	0.23	0.05	0.35	0.13	0.07	0.07	0.07	1117.58
Bldg. 512	Boiler #B7	388935	0.01	0.00	0.01	0.01	0.00	0.00	0.00	46.57	0.23	0.05	0.35	0.13	0.07	0.07	0.07	1117.58
Bldg. 512	Boiler #B8	388936	0.01	0.00	0.01	0.01	0.00	0.00	0.00	46.57	0.23	0.05	0.35	0.13	0.07	0.07	0.07	1117.58
Bldg. 512	Boiler #B9	388937	0.01	0.00	0.01	0.01	0.00	0.00	0.00	46.57	0.23	0.05	0.35	0.13	0.07	0.07	0.07	1117.58
Bldg. 512	Boiler #B10	388938	0.01	0.00	0.01	0.01	0.00	0.00	0.00	46.57	0.23	0.05	0.35	0.13	0.07	0.07	0.07	1117.58
Bldg. 512	Boiler #B11	388939	0.01	0.00	0.01	0.01	0.00	0.00	0.00	46.57	0.23	0.05	0.35	0.13	0.07	0.07	0.07	1117.58
Bldg. 512	Boiler #B12	388940	0.01	0.00	0.01	0.01	0.00	0.00	0.00	46.57	0.23	0.05	0.35	0.13	0.07	0.07	0.07	1117.58
Bldg. 512	Boiler #B13	388941	0.01	0.00	0.01	0.01	0.00	0.00	0.00	46.57	0.23	0.05	0.35	0.13	0.07	0.07	0.07	1117.58
Bldg. 515	Boiler #B1	114092	0.25	0.01	0.21	0.03	0.02	0.02	0.02	292.50	5.88	0.32	4.94	0.82	0.45	0.45	0.45	7020.00
Bldg. 515	Boiler #B2	114093	0.25	0.01	0.21	0.03	0.02	0.02	0.02	292.50	5.88	0.32	4.94	0.82	0.45	0.45	0.45	7020.00
Bldg. 515	Boiler #B3	114094	0.25	0.01	0.21	0.03	0.02	0.02	0.02	292.50	5.88	0.32	4.94	0.82	0.45	0.45	0.45	7020.00
Bldg. 516	Boiler #B5	393622	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 516	Boiler #B6	363623	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 516	Boiler #B7	393624	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 520	Boiler #B1	114084	0.17	0.02	1.37	0.06	0.03	0.03	0.03	538.20	3.97	0.60	32.79	1.51	0.83	0.83	0.83	12916.80
Bldg. 521	Boiler #B1	114085	0.11	0.02	0.88	0.04	0.02	0.02	0.02	347.49	2.57	0.38	21.17	0.98	0.53	0.53	0.53	8339.76
Bldg. 525	Boiler #B1	393439	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 525	Boiler #B2	393440	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 526	Boiler #B1	387978	0.14	0.01	0.12	0.02	0.01	0.01	0.01	164.97	3.32	0.18	2.77	0.46	0.25	0.25	0.25	3959.28

Building	Operator ID	Device ID	NOx (lb/hr)	ROC (lb/hr)	CO (lb/hr)	SOx (lb/hr)	PM (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	GHG (lb/hr)	NOx (lb/day)	ROC (lb/day)	CO (lb/day)	SOx (lb/day)	PM (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	GHG (lb/day)
Bldg. 526	Boiler #B2	387979	0.14	0.01	0.12	0.02	0.01	0.01	0.01	164.97	3.32	0.18	2.77	0.46	0.25	0.25	0.25	3959.28
Bldg. 528	Boiler #B1	393266	0.07	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.73	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 528	Boiler #B2	387629	0.15	0.01	0.12	0.02	0.01	0.01	0.01	175.50	3.53	0.19	2.95	0.49	0.27	0.27	0.27	4212.00
Bldg. 533	Boiler #B1	387980	0.19	0.01	0.16	0.03	0.01	0.01	0.01	222.30	4.47	0.25	3.74	0.62	0.34	0.34	0.34	5335.20
Bldg. 533	Boiler #B2	387981	0.19	0.01	0.16	0.03	0.01	0.01	0.01	222.30	4.47	0.25	3.76	0.62	0.34	0.34	0.34	5335.20
Bldg. 533	Boiler #B3	387983	0.19	0.01	0.16	0.03	0.01	0.01	0.01	222.30	4.47	0.25	3.76	0.62	0.34	0.34	0.34	5335.20
Bldg. 533	Boiler #B4	387982	0.19	0.01	0.16	0.03	0.01	0.01	0.01	222.30	4.47	0.25	3.76	0.62	0.34	0.34	0.34	5335.20
Bldg. 534	Boiler B-1	114710	0.11	0.02	0.88	0.04	0.02	0.02	0.02	347.49	2.57	0.38	21.17	0.98	0.53	0.53	0.53	8339.76
Bldg. 534	Boiler #B-2	114711	0.11	0.02	0.88	0.04	0.02	0.02	0.02	347.49	2.57	0.38	21.17	0.98	0.53	0.53	0.53	8339.76
Bldg. 534	Boiler B1	393444	0.09	0.01	0.77	0.04	0.02	0.02	0.02	304.20	2.25	0.34	18.53	0.85	0.47	0.47	0.47	7300.80
Bldg. 535	Boiler #B1	114109	0.29	0.02	0.25	0.04	0.02	0.02	0.02	351.00	7.06	0.39	5.93	0.99	0.54	0.54	0.54	8424.00
Bldg. 542	Boiler B-1	114712	0.05	0.01	0.39	0.02	0.01	0.01	0.01	152.10	1.12	0.17	9.27	0.43	0.23	0.23	0.23	3650.40
Bldg. 542	Boiler B-2	114713	0.05	0.01	0.39	0.02	0.01	0.01	0.01	152.10	1.12	0.17	9.27	0.43	0.23	0.23	0.23	3650.40
Bldg. 544	Boiler #B1	114079	0.09	0.01	0.77	0.04	0.02	0.02	0.02	304.20	2.25	0.34	18.53	0.85	0.47	0.47	0.47	7300.80
Bldg. 544	Boiler #B2	114080	0.09	0.01	0.77	0.04	0.02	0.02	0.02	304.20	2.25	0.34	18.53	0.85	0.47	0.47	0.47	7300.80
Bldg. 549	Boiler #B1	393267	0.11	0.02	0.87	0.04	0.02	0.02	0.02	343.98	2.54	0.38	20.96	0.97	0.53	0.53	0.53	8255.52
Bldg. 549	Boiler #B2	393268	0.11	0.02	0.87	0.04	0.02	0.02	0.02	343.98	2.54	0.38	20.96	0.97	0.53	0.53	0.53	8255.52
Bldg. 551	Boiler B1	393269	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 551	Boiler B2	393270	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 552	Boiler #B1	393593	0.02	0.01	0.11	0.02	0.01	0.01	0.01	179.71	0.52	0.20	2.73	0.51	0.28	0.28	0.28	4313.09
Bldg. 552	Boiler #B2	393594	0.02	0.01	0.11	0.02	0.01	0.01	0.01	179.71	0.52	0.20	2.73	0.51	0.28	0.28	0.28	4313.09
Bldg. 553	Boiler #B1	393625	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 553	Boiler #B2	393626	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00

Building	Operator ID	Device ID	NOx (lb/hr)	ROC (lb/hr)	CO (lb/hr)	SOx (lb/hr)	PM (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	GHG (lb/hr)	NOx (lb/day)	ROC (lb/day)	CO (lb/day)	SOx (lb/day)	PM (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	GHG (lb/day)
Bldg. 554	Boiler #B1	393442	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 554	Boiler #B2	393443	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 558	Boiler #B1	393447	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 558	Boiler #B2	393448	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg 560	Boiler #B2	387971	0.15	0.01	0.12	0.02	0.01	0.01	0.01	175.50	3.53	0.19	2.95	0.49	0.27	0.27	0.27	4212.00
Bldg. 560	Boiler #B1	393441	0.11	0.02	0.93	0.04	0.02	0.02	0.02	365.04	2.70	0.40	22.24	1.03	0.56	0.56	0.56	8760.96
Bldg. 561	Boiler #B1	114131	0.06	0.01	0.45	0.02	0.01	0.01	0.01	179.01	1.32	0.20	10.91	0.50	0.28	0.28	0.28	4296.24
Bldg. 561	Boiler #B2	114132	0.06	0.01	0.45	0.02	0.01	0.01	0.01	179.01	1.32	0.20	10.91	0.50	0.28	0.28	0.28	4296.24
Bldg. 562	Boiler B6	391529	0.04	0.01	0.45	0.02	0.01	0.01	0.01	175.50	0.86	0.19	10.69	0.49	0.27	0.27	0.27	4212.00
Bldg. 562	Boiler B1	114251	0.06	0.01	0.50	0.02	0.01	0.01	0.01	196.56	1.45	0.22	11.98	0.55	0.30	0.30	0.30	4717.44
Bldg. 562	Boiler B2	114252	0.06	0.01	0.50	0.02	0.01	0.01	0.01	196.56	1.45	0.22	11.98	0.55	0.30	0.30	0.30	4717.44
Bldg. 562	Boiler B3	395683	0.02	0.01	0.11	0.02	0.01	0.01	0.01	175.50	0.53	0.19	2.67	0.49	0.27	0.27	0.27	4212.00
Bldg. 562	Boiler B2	395684	0.02	0.01	0.11	0.02	0.01	0.01	0.01	175.50	0.53	0.19	2.67	0.49	0.27	0.27	0.27	4212.00
Bldg. 563	Boiler #B1	114124	0.45	0.02	0.38	0.06	0.03	0.03	0.03	538.20	10.82	0.60	9.10	1.51	0.83	0.83	0.83	12916.80
Bldg. 563	Boiler #B2	114125	0.45	0.02	0.38	0.06	0.03	0.03	0.03	538.20	10.82	0.60	9.10	1.51	0.83	0.83	0.83	12916.80
Bldg. 564	Boiler #B1	114110	0.21	0.01	0.17	0.03	0.02	0.02	0.02	245.70	4.94	0.27	4.15	0.69	0.38	0.38	0.38	5896.80
Bldg. 571	Boiler #B1	114135	0.05	0.01	0.15	0.03	0.02	0.02	0.02	234.00	1.15	0.26	3.55	0.66	0.36	0.36	0.36	5616.00
Bldg. 571	Boiler #B2	114136	0.05	0.01	0.15	0.03	0.02	0.02	0.02	234.00	1.15	0.26	3.55	0.66	0.36	0.36	0.36	5616.00
Bldg. 571	Boiler #B3	114137	0.05	0.01	0.15	0.03	0.02	0.02	0.02	234.00	1.15	0.26	3.55	0.66	0.36	0.36	0.36	5616.00
Bldg. 571	Boiler #B4	114138	0.05	0.01	0.15	0.03	0.02	0.02	0.02	234.00	1.15	0.26	3.55	0.66	0.36	0.36	0.36	5616.00
Bldg. 588	Boiler #B1	114127	0.21	0.01	0.18	0.03	0.02	0.02	0.02	252.72	5.08	0.28	4.27	0.71	0.39	0.39	0.39	6065.28
Bldg. 588	Boiler #B2	393200	0.07	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.73	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 615	Boiler #B1	393446	0.09	0.01	0.74	0.03	0.02	0.02	0.02	292.50	2.16	0.32	17.82	0.82	0.45	0.45	0.45	7020.00

Building	Operator ID	Device ID	NOx (lb/hr)	ROC (lb/hr)	CO (lb/hr)	SOx (lb/hr)	PM (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	GHG (lb/hr)	NOx (lb/day)	ROC (lb/day)	CO (lb/day)	SOx (lb/day)	PM (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	GHG (lb/day)
Bldg. 657	Boiler #B1	394662	0.14	0.02	1.16	0.05	0.03	0.03	0.03	456.30	3.37	0.51	27.80	1.28	0.70	0.70	0.70	10951.20
Bldg. 657	Boiler #B2	386829	0.05	0.01	0.59	0.03	0.02	0.02	0.02	234.00	1.15	0.26	14.26	0.66	0.36	0.36	0.36	5616.00
Bldg. 860	Boiler B-1	393008	0.02	0.01	0.11	0.02	0.01	0.01	0.01	175.50	0.53	0.19	2.67	0.49	0.27	0.27	0.27	4212.00
Bldg. 860	Boiler B-2	393011	0.02	0.01	0.11	0.02	0.01	0.01	0.01	175.50	0.53	0.19	2.67	0.49	0.27	0.27	0.27	4212.00
Bldg. 860	Boiler B-3	393012	0.02	0.01	0.11	0.02	0.01	0.01	0.01	175.50	0.53	0.19	2.67	0.49	0.27	0.27	0.27	4212.00
Total			**8.29**	**1.02**	**40.39**	**2.60**	**1.42**	**1.42**	**1.42**	**22181.6**	**199.05**	**24.57**	**969.31**	**62.31**	**34.13**	**34.13**	**34.13**	**532357.5**

Table 5.4: Long Term Potential to Emit - External Combustion

Bldg	Operator ID	Device ID	NOx (ton/ qtr)	ROC (ton/ qtr)	CO (ton/ qtr)	SOx (ton/ qtr)	PM (ton/ qtr)	PM10 (ton/ qtr)	PM2.5 (ton/ qtr)	GHG (ton/ qtr)	NOx (ton/ yr)	ROC (ton/ yr)	CO (ton/ yr)	SOx (ton/ yr)	PM (ton/ yr)	PM10 (ton/ yr)	PM2.5 (ton/ yr)	GHG (ton/ yr)
Bldg. 221	Boiler #B1	114076	0.22	0.01	0.19	0.03	0.02	0.02	0.02	265.20	0.89	0.05	0.75	0.12	0.07	0.07	0.07	1060.79
Bldg. 225	Boiler #B1	388327	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 225	Boiler #B2	388328	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 225	Boiler #B3	388329	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 235	Boiler #B1	394764	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 235	Boiler B2	393445	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 266	Boiler B1	393026	0.08	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.34	0.05	2.82	0.13	0.07	0.07	0.07	1110.33
Bldg. 266	Boiler B2	393027	0.08	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.34	0.05	2.82	0.13	0.07	0.07	0.07	1110.33
Bldg. 266	Boiler #B3	114063	0.37	0.02	0.29	0.05	0.03	0.03	0.03	416.37	0.98	0.05	0.78	0.13	0.07	0.07	0.07	1110.33
Bldg. 276	Boiler #B1	114128	0.09	0.01	0.74	0.03	0.02	0.02	0.02	290.82	0.36	0.05	2.95	0.14	0.07	0.07	0.07	1163.28
Bldg. 276	Boiler #B2	114129	0.09	0.01	0.74	0.03	0.02	0.02	0.02	290.82	0.36	0.05	2.95	0.14	0.07	0.07	0.07	1163.28
Bldg. 479	Boiler #B1	114112	0.12	0.02	0.98	0.05	0.02	0.02	0.02	384.35	0.47	0.07	3.90	0.18	0.10	0.10	0.10	1537.38
Bldg. 479	Boiler #B2	114113	0.12	0.02	0.98	0.05	0.02	0.02	0.02	384.35	0.47	0.07	3.90	0.18	0.10	0.10	0.10	1537.38
Bldg. 503	Boiler #B1	388948	0.04	0.01	0.47	0.02	0.01	0.01	0.01	187.05	0.15	0.03	1.90	0.09	0.05	0.05	0.05	748.19
Bldg. 503	Boiler B2	386140	0.04	0.01	0.49	0.02	0.01	0.01	0.01	192.17	0.16	0.04	1.95	0.09	0.05	0.05	0.05	768.69
Bldg. 503	Boiler B3	386141	0.04	0.01	0.49	0.02	0.01	0.01	0.01	192.17	0.16	0.04	1.95	0.09	0.05	0.05	0.05	768.69
Bldg. 503	Boiler B4	386142	0.04	0.01	0.49	0.02	0.01	0.01	0.01	192.17	0.16	0.04	1.95	0.09	0.05	0.05	0.05	768.69

Bldg	Operator ID	Device ID	NOx (ton/ qtr)	ROC (ton/ qtr)	CO (ton/ qtr)	SOx (ton/ qtr)	PM (ton/ qtr)	PM10 (ton/ qtr)	PM2.5 (ton/ qtr)	GHG (ton/ qtr)	NOx (ton/ yr)	ROC (ton/ yr)	CO (ton/ yr)	SOx (ton/ yr)	PM (ton/ yr)	PM10 (ton/ yr)	PM2.5 (ton/ yr)	GHG (ton/ yr)
Bldg. 503	Boiler B5	386143	0.04	0.01	0.49	0.02	0.01	0.01	0.01	192.17	0.16	0.04	1.95	0.09	0.05	0.05	0.05	768.69
Bldg. 503	Boiler B6	386144	0.04	0.01	0.49	0.02	0.01	0.01	0.01	192.17	0.16	0.04	1.95	0.09	0.05	0.05	0.05	768.69
Bldg. 503	Boiler B7	386145	0.04	0.01	0.49	0.02	0.01	0.01	0.01	192.17	0.16	0.04	1.95	0.09	0.05	0.05	0.05	768.69
Bldg. 505	Boiler #B1	393029	0.04	0.01	0.47	0.02	0.01	0.01	0.01	185.77	0.15	0.03	1.89	0.09	0.05	0.05	0.05	743.07
Bldg. 505	Boiler #B2	393030	0.04	0.01	0.47	0.02	0.01	0.01	0.01	185.77	0.15	0.03	1.89	0.09	0.05	0.05	0.05	743.07
Bldg. 512	Boiler #B1	394908	0.05	0.02	0.32	0.06	0.03	0.03	0.03	512.46	0.19	0.09	1.30	0.24	0.13	0.13	0.13	2049.84
Bldg. 512	Boiler #B2	394910	0.05	0.02	0.32	0.06	0.03	0.03	0.03	512.46	0.19	0.09	1.30	0.24	0.13	0.13	0.13	2049.84
Bldg. 512	Boiler #B6	388933	0.01	0.00	0.02	0.01	0.00	0.00	0.00	50.99	0.04	0.01	0.06	0.02	0.01	0.01	0.01	203.96
Bldg. 512	Boiler #B7	388935	0.01	0.00	0.02	0.01	0.00	0.00	0.00	50.99	0.04	0.01	0.06	0.02	0.01	0.01	0.01	203.96
Bldg. 512	Boiler #B8	388936	0.01	0.00	0.02	0.01	0.00	0.00	0.00	50.99	0.04	0.01	0.06	0.02	0.01	0.01	0.01	203.96
Bldg. 512	Boiler #B9	388937	0.01	0.00	0.02	0.01	0.00	0.00	0.00	50.99	0.04	0.01	0.06	0.02	0.01	0.01	0.01	203.96
Bldg. 512	Boiler #B10	388938	0.01	0.00	0.02	0.01	0.00	0.00	0.00	50.99	0.04	0.01	0.06	0.02	0.01	0.01	0.01	203.96
Bldg. 512	Boiler #B11	388939	0.01	0.00	0.02	0.01	0.00	0.00	0.00	50.99	0.04	0.01	0.06	0.02	0.01	0.01	0.01	203.96
Bldg. 512	Boiler #B12	388940	0.01	0.00	0.02	0.01	0.00	0.00	0.00	50.99	0.04	0.01	0.06	0.02	0.01	0.01	0.01	203.96
Bldg. 512	Boiler #B13	388941	0.01	0.00	0.02	0.01	0.00	0.00	0.00	50.99	0.04	0.01	0.06	0.02	0.01	0.01	0.01	203.96
Bldg. 515	Boiler #B1	114092	0.27	0.01	0.23	0.04	0.02	0.02	0.02	320.29	1.07	0.06	0.90	0.15	0.08	0.08	0.08	1281.15
Bldg. 515	Boiler #B2	114093	0.27	0.01	0.23	0.04	0.02	0.02	0.02	320.29	1.07	0.06	0.90	0.15	0.08	0.08	0.08	1281.15
Bldg. 515	Boiler #B3	114094	0.27	0.01	0.23	0.04	0.02	0.02	0.02	320.29	1.07	0.06	0.90	0.15	0.08	0.08	0.08	1281.15
Bldg. 516	Boiler #B5	393622	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 516	Boiler #B6	363623	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 516	Boiler #B7	393624	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 520	Boiler #B1	114084	0.18	0.03	1.50	0.07	0.04	0.04	0.04	589.33	0.73	0.11	5.98	0.28	0.15	0.15	0.15	2357.32
Bldg. 521	Boiler #B1	114085	0.12	0.02	0.97	0.04	0.02	0.02	0.02	380.50	0.47	0.07	3.86	0.18	0.10	0.10	0.10	1522.01

Bldg	Operator ID	Device ID	NOx (ton/ qtr)	ROC (ton/ qtr)	CO (ton/ qtr)	SOx (ton/ qtr)	PM (ton/ qtr)	PM10 (ton/ qtr)	PM2.5 (ton/ qtr)	GHG (ton/ qtr)	NOx (ton/ yr)	ROC (ton/ yr)	CO (ton/ yr)	SOx (ton/ yr)	PM (ton/ yr)	PM10 (ton/ yr)	PM2.5 (ton/ yr)	GHG (ton/ yr)
Bldg. 525	Boiler #B1	393439	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 525	Boiler #B2	393440	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 526	Boiler #B1	387978	0.15	0.01	0.13	0.02	0.01	0.01	0.01	180.64	0.61	0.03	0.51	0.08	0.05	0.05	0.05	722.57
Bldg. 526	Boiler #B2	387979	0.15	0.01	0.13	0.02	0.01	0.01	0.01	180.64	0.61	0.03	0.51	0.08	0.05	0.05	0.05	722.57
Bldg. 528	Boiler #B1	393266	0.08	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.32	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 528	Boiler #B2	387629	0.16	0.01	0.13	0.02	0.01	0.01	0.01	192.17	0.64	0.04	0.54	0.09	0.05	0.05	0.05	768.69
Bldg. 533	Boiler #B1	387980	0.20	0.01	0.17	0.03	0.02	0.02	0.02	243.42	0.82	0.04	0.68	0.11	0.06	0.06	0.06	973.67
Bldg. 533	Boiler #B2	387981	0.20	0.01	0.17	0.03	0.02	0.02	0.02	243.42	0.82	0.04	0.69	0.11	0.06	0.06	0.06	973.67
Bldg. 533	Boiler #B3	387983	0.20	0.01	0.17	0.03	0.02	0.02	0.02	243.42	0.82	0.04	0.69	0.11	0.06	0.06	0.06	973.67
Bldg. 533	Boiler #B4	387982	0.20	0.01	0.17	0.03	0.02	0.02	0.02	243.42	0.82	0.04	0.69	0.11	0.06	0.06	0.06	973.67
Bldg. 534	Boiler B-1	114710	0.12	0.02	0.97	0.04	0.02	0.02	0.02	380.50	0.47	0.07	3.86	0.18	0.10	0.10	0.10	1522.01
Bldg. 534	Boiler #B-2	114711	0.12	0.02	0.97	0.04	0.02	0.02	0.02	380.50	0.47	0.07	3.86	0.18	0.10	0.10	0.10	1522.01
Bldg. 534	Boiler B1	393444	0.10	0.02	0.85	0.04	0.02	0.02	0.02	333.10	0.41	0.06	3.38	0.16	0.09	0.09	0.09	1332.40
Bldg. 535	Boiler #B1	114109	0.32	0.02	0.27	0.05	0.02	0.02	0.02	384.35	1.29	0.07	1.08	0.18	0.10	0.10	0.10	1537.38
Bldg. 542	Boiler B-1	114712	0.05	0.01	0.42	0.02	0.01	0.01	0.01	166.55	0.20	0.03	1.69	0.08	0.04	0.04	0.04	666.20
Bldg. 542	Boiler B-2	114713	0.05	0.01	0.42	0.02	0.01	0.01	0.01	166.55	0.20	0.03	1.69	0.08	0.04	0.04	0.04	666.20
Bldg. 544	Boiler #B1	114079	0.10	0.02	0.85	0.04	0.02	0.02	0.02	333.10	0.41	0.06	3.38	0.16	0.09	0.09	0.09	1332.40
Bldg. 544	Boiler #B2	114080	0.10	0.02	0.85	0.04	0.02	0.02	0.02	333.10	0.41	0.06	3.38	0.16	0.09	0.09	0.09	1332.40
Bldg. 549	Boiler #B1	393267	0.12	0.02	0.96	0.04	0.02	0.02	0.02	376.66	0.46	0.07	3.82	0.18	0.10	0.10	0.10	1506.63
Bldg. 549	Boiler #B2	393268	0.12	0.02	0.96	0.04	0.02	0.02	0.02	376.66	0.46	0.07	3.82	0.18	0.10	0.10	0.10	1506.63
Bldg. 551	Boiler B1	393269	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 551	Boiler B2	393270	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 552	Boiler #B1	393593	0.02	0.01	0.12	0.02	0.01	0.01	0.01	196.78	0.09	0.04	0.50	0.09	0.05	0.05	0.05	787.14

Bldg	Operator ID	Device ID	NOx (ton/ qtr)	ROC (ton/ qtr)	CO (ton/ qtr)	SOx (ton/ qtr)	PM (ton/ qtr)	PM10 (ton/ qtr)	PM2.5 (ton/ qtr)	GHG (ton/ qtr)	NOx (ton/ yr)	ROC (ton/ yr)	CO (ton/ yr)	SOx (ton/ yr)	PM (ton/ yr)	PM10 (ton/ yr)	PM2.5 (ton/ yr)	GHG (ton/ yr)
Bldg. 552	Boiler #B2	393594	0.02	0.01	0.12	0.02	0.01	0.01	0.01	196.78	0.09	0.04	0.50	0.09	0.05	0.05	0.05	787.14
Bldg. 553	Boiler #B1	393625	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 553	Boiler #B2	393626	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 554	Boiler #B1	393442	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 554	Boiler #B2	393443	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 558	Boiler #B1	393447	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 558	Boiler #B2	393448	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg 560	Boiler #B2	387971	0.16	0.01	0.13	0.02	0.01	0.01	0.01	192.17	0.64	0.04	0.54	0.09	0.05	0.05	0.05	768.69
Bldg. 560	Boiler #B1	393441	0.12	0.02	1.01	0.05	0.03	0.03	0.03	399.72	0.49	0.07	4.06	0.19	0.10	0.10	0.10	1598.88
Bldg. 561	Boiler #B1	114131	0.06	0.01	0.50	0.02	0.01	0.01	0.01	196.02	0.24	0.04	1.99	0.09	0.05	0.05	0.05	784.06
Bldg. 561	Boiler #B2	114132	0.06	0.01	0.50	0.02	0.01	0.01	0.01	196.02	0.24	0.04	1.99	0.09	0.05	0.05	0.05	784.06
Bldg. 562	Boiler B6	391529	0.04	0.01	0.49	0.02	0.01	0.01	0.01	192.17	0.16	0.04	1.95	0.09	0.05	0.05	0.05	768.69
Bldg. 562	Boiler B1	114251	0.07	0.01	0.55	0.03	0.01	0.01	0.01	215.23	0.26	0.04	2.19	0.10	0.06	0.06	0.06	860.93
Bldg. 562	Boiler B2	114252	0.07	0.01	0.55	0.03	0.01	0.01	0.01	215.23	0.26	0.04	2.19	0.10	0.06	0.06	0.06	860.93
Bldg. 562	Boiler B3	395683	0.02	0.01	0.12	0.02	0.01	0.01	0.01	192.17	0.10	0.04	0.49	0.09	0.05	0.05	0.05	768.69
Bldg. 562	Boiler B2	395684	0.02	0.01	0.12	0.02	0.01	0.01	0.01	192.17	0.10	0.04	0.49	0.09	0.05	0.05	0.05	768.69
Bldg. 563	Boiler #B1	114124	0.49	0.03	0.42	0.07	0.04	0.04	0.04	589.33	1.97	0.11	1.66	0.28	0.15	0.15	0.15	2357.32
Bldg. 563	Boiler #B2	114125	0.49	0.03	0.42	0.07	0.04	0.04	0.04	589.33	1.97	0.11	1.66	0.28	0.15	0.15	0.15	2357.32
Bldg. 564	Boiler #B1	114110	0.23	0.01	0.19	0.03	0.02	0.02	0.02	269.04	0.90	0.05	0.76	0.13	0.07	0.07	0.07	1076.17
Bldg. 571	Boiler #B1	114135	0.05	0.01	0.16	0.03	0.02	0.02	0.02	256.23	0.21	0.05	0.65	0.12	0.07	0.07	0.07	1024.92
Bldg. 571	Boiler #B2	114136	0.05	0.01	0.16	0.03	0.02	0.02	0.02	256.23	0.21	0.05	0.65	0.12	0.07	0.07	0.07	1024.92
Bldg. 571	Boiler #B3	114137	0.05	0.01	0.16	0.03	0.02	0.02	0.02	256.23	0.21	0.05	0.65	0.12	0.07	0.07	0.07	1024.92
Bldg. 571	Boiler #B4	114138	0.05	0.01	0.16	0.03	0.02	0.02	0.02	256.23	0.21	0.05	0.65	0.12	0.07	0.07	0.07	1024.92

Bldg	Operator ID	Device ID	NOx (ton/ qtr)	ROC (ton/ qtr)	CO (ton/ qtr)	SOx (ton/ qtr)	PM (ton/ qtr)	PM10 (ton/ qtr)	PM2.5 (ton/ qtr)	GHG (ton/ qtr)	NOx (ton/ yr)	ROC (ton/ yr)	CO (ton/ yr)	SOx (ton/ yr)	PM (ton/ yr)	PM10 (ton/ yr)	PM2.5 (ton/ yr)	GHG (ton/ yr)
Bldg. 588	Boiler #B1	114127	0.23	0.01	0.19	0.03	0.02	0.02	0.02	276.73	0.93	0.05	0.78	0.13	0.07	0.07	0.07	1106.91
Bldg. 588	Boiler #B2	393200	0.08	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.32	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 615	Boiler #B1	393446	0.10	0.01	0.81	0.04	0.02	0.02	0.02	320.29	0.39	0.06	3.25	0.15	0.08	0.08	0.08	1281.15
Bldg. 657	Boiler #B1	394662	0.15	0.02	1.27	0.06	0.03	0.03	0.03	499.65	0.61	0.09	5.07	0.23	0.13	0.13	0.13	1998.59
Bldg. 657	Boiler #B2	386829	0.05	0.01	0.65	0.03	0.02	0.02	0.02	256.23	0.21	0.05	2.60	0.12	0.07	0.07	0.07	1024.92
Bldg. 860	Boiler B-1	393008	0.02	0.01	0.12	0.02	0.01	0.01	0.01	192.17	0.10	0.04	0.49	0.09	0.05	0.05	0.05	768.69
Bldg. 860	Boiler B-2	393011	0.02	0.01	0.12	0.02	0.01	0.01	0.01	192.17	0.10	0.04	0.49	0.09	0.05	0.05	0.05	768.69
Bldg. 860	Boiler B-3	393012	0.02	0.01	0.12	0.02	0.01	0.01	0.01	192.17	0.10	0.04	0.49	0.09	0.05	0.05	0.05	768.69
Total			**9.08**	**1.12**	**44.22**	**2.84**	**1.56**	**1.56**	**1.56**	**24288.8**	**35.89**	**4.47**	**176.94**	**11.33**	**6.20**	**6.20**	**6.20**	**96770.90**

Table 5.5: Operating Equipment Description - Reciprocating Internal Combustion

Building	Operator ID	Device ID	Fuel Type	Make	Model	Rating (bhp)	Engine Use	Hrs/Day	Hrs/Yr
Bldg. 205	Emer. Generator	114058	Diesel	Caterpillar	3208	299	Emer. Gen.	2	20
Bldg. 221	Emer. Generator	114030	Diesel	Cummins	QSM11-G2	470	Emer. Gen.	2	50
Bldg. 225	Emer. Generator	114057	Diesel	Cummins	06T30-G5-NRI	1490	Emer. Gen.	2	20
Bldg. 226	Emer. Generator	393553	Diesel	Caterpillar	C7.1	281	Emer. Gen.	2	50
Bldg. 235	Emer. Generator	114056	Diesel	Volvo	TAD1631GE	768	Emer. Gen.	2	20
Bldg. 250	Emer. Generator	114055	Diesel	John Deere	6059TF002	152	Emer. Gen.	2	20
Bldg. 266	Emer. Generator	114054	Diesel	Caterpillar	3512	2172	Emer. Gen.	2	20
Bldg. 276	Emer. Generator	114071	Diesel	Caterpillar	C9	398	Emer. Gen.	2	50
Bldg. 503	Emer. Generator	114134	Diesel	Caterpillar	c15	798	Emer. Gen.	2	50
Bldg. 506	Emer. Generator	395544	Diesel	Caterpillar	C4.4	161	Emer. Gen.	2	40
Bldg. 511	Emer. Generator	114052	Diesel	Cummins	6BTA5.9-G4	170	Emer. Gen.	2	20
Bldg. 512	Emer. Generator	388947	Diesel	Mitsubishi	S12R-Y2PTAW-1	1881	Emer. Gen.	2	50
Bldg. 515	Emer. Generator	114051	Diesel	Det. Diesel	12V71TA	750	Emer. Gen.	2	20
Bldg. 516	Emer. Generator	114050	Diesel	Cummins	4B3.9-G	68	Emer. Gen.	2	20
Bldg. 520	Emer. Generator	114049	Diesel	Cummins	QSX15-G9	755	Emer. Gen.	2	20
Bldg. 521	Emer. Generator	114048	Diesel	Cummins	NTA-855-G3	535	Emer. Gen.	2	20
Bldg. 525	Emer. Generator	386852	Diesel	Caterpillar	C15	762	Emer. Gen.	2	50
Bldg. 526	Emer. Generator	393041	Diesel	Caterpillar	C4.4	96	Emer. Gen.	2	50
Bldg. 529	Emer. Generator	393551	Diesel	Cummins	QSB7	324	Emer. Gen.	2	50
Bldg. 529	Emer. Generator	393552	Diesel	Cummins	QSB7	324	Emer. Gen.	2	50
Bldg. 531	Emer. Generator	394710	Diesel	Cummins	4BT3.3-G5	69	Emer. Gen.	2	50
Bldg. 535	Emer. Generator	114139	Diesel	Cummins	QSX15-G9 NR2	755	Emer. Gen.	2	50
Bldg. 542	Emer. Generator	114059	Diesel	Generac	70874	56	Emer. Gen.	2	20
Bldg. 544	Emer. Generator	114047	Diesel	Caterpillar	3306	382	Emer. Gen.	2	20
Bldg. 549	Emer. Generator	114046	Diesel	Mitsubishi	OD5703	292	Emer. Gen.	2	20
Bldg. 551	Emer. Generator	114045	Diesel	Caterpillar	3208	263	Emer. Gen.	2	20
Bldg. 553	Emer. Generator	114064	Diesel	John Deere	5030TF270	64	Emer. Gen.	2	50
Bldg. 554	Emer. Generator	394712	Diesel	Cummins	4BT3.3-G5	69	Emer. Gen.	2	50
Bldg. 555	Emer. Generator	114033	Diesel	Cummins	NT-855-G2	355	Emer. Gen.	2	20
Bldg. 556	Emer. Generator	114044	Diesel	Cummins	6CTA-8.3-G	277	Emer. Gen.	2	20
Bldg. 557	Emer. Generator	114043	Diesel	Caterpillar	3406	519	Emer. Gen.	2	20
Bldg. 558	Emer. Generator	114130	Diesel	Perkins	C4.4 ACERT 3362/1800	157	Emer. Gen.	2	50

Building	Operator ID	Device ID	Fuel Type	Make	Model	Rating (bhp)	Engine Use	Hrs/Day	Hrs/Yr
Bldg. 561	Emer. Generator	114070	Diesel	John Deere	5030TF270 / SD040	64	Emer. Gen.	2	50
Bldg. 562	Emer. Generator	114038	Diesel	Caterpillar	92461	207	Emer. Gen.	2	20
Bldg. 565	Emer. Generator	114042	Diesel	Cummins	NT-855-G4	375	Emer. Gen.	2	20
Bldg. 568	Emer. Generator	114041	Diesel	Caterpillar	3056	166	Emer. Gen.	2	20
Bldg. 571	Emer. Generator	114040	Diesel	Caterpillar	3412	749	Emer. Gen.	2	20
Bldg. 572	Emer. Generator	114039	Diesel	Cummins	Q5X15-G9	755	Emer. Gen.	2	20
Bldg. 574	Emer. Generator	394714	Diesel	Cummins	4BT3.3-G5	69	Emer. Gen.	2	50
Bldg. 574	Emer. Generator	114037	Diesel	Caterpillar	3208	299	Emer. Gen.	2	20
Bldg. 585	Emer. Generator	114036	Diesel	Caterpillar	3412	742	Emer. Gen.	2	20
Bldg. 588	Emer. Generator	388960	Diesel	Caterpillar	D200-2	315	Emer. Gen.	2	50
Bldg. 615	Emer. Generator	114035	Diesel	Cummins	LTA10G1	380	Emer. Gen.	2	20
Bldg. 657	Emer. Generator	114034	Diesel	Caterpillar	3412DI	890	Emer. Gen.	2	20
Bldg. 860	Emer. F/W Pump	114029	Diesel	Cummins	6BTA5.9-F2	130	F/W Pump	NA	NA
Bldg. 860	Emer. Generator	114060	Diesel	Mitsubishi	W31066D240PT-GN01(000)	367	Emer. Gen.	2	20
Bldg. 1861	Emer. Generator	388928	Diesel	John Deere	6068HFG82	284	Emer. Gen.	2	50
Portable	Emer. Water Pump	388929	Diesel	John Deere	4045TF275	113	Emer. Pump	2	30

Table 5.6: Emission Factors – Reciprocating Internal Combustion

Building	Operator ID	Device ID	NOx (g/hp-hr)	ROC (g/hp-hr)	CO (g/hp-hr)	SOx (g/hp-hr)	PM (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	GHG (g/hp-hr)
Bldg. 205	Emer. Generator	114058	6.90	1.00	8.50	0.01	0.40	0.40	0.40	556.58
Bldg. 221	Emer. Generator	114030	4.50	0.30	2.60	0.01	0.15	0.15	0.15	556.58
Bldg. 225	Emer. Generator	114057	6.90	1.00	8.50	0.01	0.40	0.40	0.40	556.58
Bldg. 226	Emer. Generator	393553	2.80	0.20	2.60	0.01	0.15	0.15	0.15	556.58
Bldg. 235	Emer. Generator	114056	6.90	1.00	8.50	0.01	0.40	0.40	0.40	556.58
Bldg. 250	Emer. Generator	114055	6.90	1.00	8.50	0.01	0.40	0.40	0.40	556.58
Bldg. 266	Emer. Generator	114054	6.90	1.00	8.50	0.01	0.40	0.40	0.40	556.58
Bldg. 276	Emer. Generator	114071	2.80	0.20	2.60	0.01	0.15	0.15	0.15	556.58
Bldg. 503	Emer. Generator	114134	4.50	0.30	2.60	0.01	0.15	0.15	0.15	556.58
Bldg. 506	Emer. Generator	395544	2.80	0.20	3.70	0.01	0.15	0.15	0.15	556.58
Bldg. 511	Emer. Generator	114052	4.50	0.40	3.70	0.01	0.22	0.22	0.22	556.58
Bldg. 512	Emer. Generator	388947	4.50	0.30	2.60	0.01	0.15	0.15	0.15	556.58
Bldg. 515	Emer. Generator	114051	14.10	1.12	3.03	0.01	0.98	0.98	0.98	556.58
Bldg. 516	Emer. Generator	114050	14.06	1.12	3.03	0.01	0.98	0.98	0.98	556.58
Bldg. 520	Emer. Generator	114049	6.90	1.00	8.50	0.01	0.40	0.40	0.40	556.58
Bldg. 521	Emer. Generator	114048	4.50	0.30	2.60	0.01	0.15	0.15	0.15	556.58
Bldg. 525	Emer. Generator	386852	4.50	0.30	2.60	0.01	0.15	0.15	0.15	556.58
Bldg. 526	Emer. Generator	393041	3.30	0.20	3.70	0.01	0.15	0.15	0.15	556.58
Bldg. 529	Emer. Generator	393551	2.80	0.20	2.60	0.01	0.15	0.15	0.15	556.58
Bldg. 529	Emer. Generator	393552	2.80	0.20	2.60	0.01	0.15	0.15	0.15	556.58
Bldg. 531	Emer. Generator	394710	3.30	0.20	3.70	0.01	0.15	0.15	0.15	556.58
Bldg. 535	Emer. Generator	114139	4.50	0.30	2.60	0.01	0.15	0.15	0.15	556.58
Bldg. 542	Emer. Generator	114059	6.90	1.00	3.03	0.01	0.98	0.98	0.98	556.58
Bldg. 544	Emer. Generator	114047	4.50	0.30	2.60	0.01	0.15	0.15	0.15	556.58
Bldg. 549	Emer. Generator	114046	4.50	0.30	2.60	0.01	0.15	0.15	0.15	556.58
Bldg. 551	Emer. Generator	114045	14.06	1.12	3.03	0.01	0.98	0.98	0.98	556.58
Bldg. 553	Emer. Generator	114064	5.20	0.40	3.70	0.01	0.15	0.15	0.15	556.58
Bldg. 554	Emer. Generator	394712	3.30	0.20	3.70	0.01	0.15	0.15	0.15	556.58
Bldg. 555	Emer. Generator	114033	14.06	1.12	3.03	0.01	0.98	0.98	0.98	556.58
Bldg. 556	Emer. Generator	114044	14.06	1.12	3.03	0.01	0.98	0.98	0.98	556.58
Bldg. 557	Emer. Generator	114043	6.90	1.00	8.50	0.01	0.40	0.40	0.40	556.58

Building	Operator ID	Device ID	NOx (g/hp-hr)	ROC (g/hp-hr)	CO (g/hp-hr)	SOx (g/hp-hr)	PM (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	GHG (g/hp-hr)
Bldg. 558	Emer. Generator	114130	2.80	0.20	3.70	0.01	0.15	0.15	0.15	556.58
Bldg. 561	Emer. Generator	114070	5.20	0.40	3.70	0.01	0.15	0.15	0.15	556.58
Bldg. 562	Emer. Generator	114038	6.90	1.00	8.50	0.01	0.40	0.40	0.40	556.58
Bldg. 565	Emer. Generator	114042	14.06	1.12	3.03	0.01	0.98	0.98	0.98	556.58
Bldg. 568	Emer. Generator	114041	14.06	1.12	3.03	0.01	0.98	0.98	0.98	556.58
Bldg. 571	Emer. Generator	114040	6.90	1.00	8.50	0.01	0.40	0.40	0.40	556.58
Bldg. 572	Emer. Generator	114039	6.90	1.00	8.50	0.01	0.40	0.40	0.40	556.58
Bldg. 574	Emer. Generator	394714	3.30	0.20	3.70	0.01	0.15	0.15	0.15	556.58
Bldg. 574	Emer. Generator	114037	14.06	1.12	3.03	0.01	0.98	0.98	0.98	556.58
Bldg. 585	Emer. Generator	114036	14.06	1.12	3.03	0.01	0.98	0.98	0.98	556.58
Bldg. 588	Emer. Generator	388960	2.80	0.20	2.60	0.01	0.15	0.15	0.15	556.58
Bldg. 615	Emer. Generator	114035	6.90	1.00	8.50	0.01	0.40	0.40	0.40	556.58
Bldg. 657	Emer. Generator	114034	14.06	1.12	3.03	0.01	0.98	0.98	0.98	556.58
Bldg. 860	Emer. F/W Pump	114029	14.06	1.12	3.03	0.01	0.98	0.98	0.98	556.58
Bldg. 860	Emer. Generator	114060	6.90	1.00	8.50	0.01	0.40	0.40	0.40	556.58
Bldg. 1861	Emer. Generator	388928	2.8	0.2	2.6	0.01	0.15	0.15	0.15	556.58
Portable	Emer. Water Pump	388929	4.5	0.4	3.7	0.01	0.22	0.22	0.22	556.58

USEPA Emission Standards for Tier 1 - 3 engines

Table 5.7: Short Term Potential to Emit – Reciprocating Internal Combustion

Building	Operator ID	Device ID	NOx (lb/hr)	ROC (lb/hr)	CO (lb/hr)	SOx (lb/hr)	PM (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	GHG (lb/hr)	NOx (lb/day)	ROC (lb/day)	CO (lb/day)	SOx (lb/day)	PM (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	GHG (lb/day)
Bldg. 205	Emer. Generator	114058	4.55	0.66	5.60	0.00	0.26	0.26	0.26	366.88	9.10	1.32	11.21	0.01	0.53	0.53	0.53	733.76
Bldg. 221	Emer. Generator	114030	4.66	0.31	2.69	0.01	0.16	0.16	0.16	576.70	9.33	0.62	5.39	0.01	0.31	0.31	0.31	1153.41
Bldg. 225	Emer. Generator	114057	22.67	3.28	27.92	0.02	1.31	1.31	1.31	1828.27	45.33	6.57	55.84	0.04	2.63	2.63	2.63	3656.54
Bldg. 226	Emer. Generator	393553	1.73	0.12	1.61	0.00	0.09	0.09	0.09	344.79	3.47	0.25	3.22	0.01	0.19	0.19	0.19	689.59
Bldg. 235	Emer. Generator	114056	11.68	1.69	14.39	0.01	0.68	0.68	0.68	942.36	23.37	3.39	28.78	0.02	1.35	1.35	1.35	1884.72
Bldg. 250	Emer. Generator	114055	2.31	0.34	2.85	0.00	0.13	0.13	0.13	186.51	4.62	0.67	5.70	0.00	0.27	0.27	0.27	373.02
Bldg. 266	Emer. Generator	114054	33.04	4.79	40.70	0.03	1.92	1.92	1.92	2665.11	66.08	9.58	81.40	0.06	3.83	3.83	3.83	5330.21
Bldg. 276	Emer. Generator	114071	2.46	0.18	2.28	0.01	0.13	0.13	0.13	488.36	4.91	0.35	4.56	0.01	0.26	0.26	0.26	976.71
Bldg. 503	Emer. Generator	114134	7.92	0.53	4.57	0.01	0.26	0.26	0.26	979.17	15.83	1.06	9.15	0.02	0.53	0.53	0.53	1958.34
Bldg. 506	Emer. Generator	395544	0.99	0.07	1.31	0.00	0.05	0.05	0.05	197.55	1.99	0.14	2.63	0.01	0.11	0.11	0.11	395.10
Bldg. 511	Emer. Generator	114052	1.69	0.15	1.39	0.00	0.08	0.08	0.08	208.59	3.37	0.30	2.77	0.00	0.16	0.16	0.16	417.19
Bldg. 512	Emer. Generator	388947	18.66	1.24	10.78	0.02	0.62	0.62	0.62	2308.04	37.32	2.49	21.56	0.05	1.24	1.24	1.24	4616.08
Bldg. 515	Emer. Generator	114051	23.31	1.85	5.01	0.01	1.62	1.62	1.62	920.27	46.63	3.70	10.02	0.02	3.24	3.24	3.24	1840.54
Bldg. 516	Emer. Generator	114050	2.11	0.17	0.45	0.00	0.15	0.15	0.15	83.44	4.22	0.34	0.91	0.00	0.29	0.29	0.29	166.88
Bldg. 520	Emer. Generator	114049	11.48	1.66	14.15	0.01	0.67	0.67	0.67	926.41	22.97	3.33	28.30	0.02	1.33	1.33	1.33	1852.81
Bldg. 521	Emer. Generator	114048	5.31	0.35	3.07	0.01	0.18	0.18	0.18	656.46	10.62	0.71	6.13	0.01	0.35	0.35	0.35	1312.92
Bldg. 525	Emer. Generator	386852	7.56	0.50	4.37	0.01	0.25	0.25	0.25	935.00	15.12	1.01	8.74	0.02	0.50	0.50	0.50	1869.99

Building	Operator ID	Device ID	NOx (lb/hr)	ROC (lb/hr)	CO (lb/hr)	SOx (lb/hr)	PM (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	GHG (lb/hr)	NOx (lb/day)	ROC (lb/day)	CO (lb/day)	SOx (lb/day)	PM (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	GHG (lb/day)
Bldg. 526	Emer. Generator	393041	0.70	0.04	0.78	0.00	0.03	0.03	0.03	117.79	1.40	0.08	1.57	0.00	0.06	0.06	0.06	235.59
Bldg. 529	Emer. Generator	393551	2.00	0.14	1.86	0.00	0.11	0.11	0.11	397.56	4.00	0.29	3.71	0.01	0.21	0.21	0.21	795.11
Bldg. 529	Emer. Generator	393552	2.00	0.14	1.86	0.00	0.11	0.11	0.11	397.56	4.00	0.29	3.71	0.01	0.21	0.21	0.21	795.11
Bldg. 531	Emer. Generator	394710	0.50	0.03	0.56	0.00	0.02	0.02	0.02	84.66	1.00	0.06	1.13	0.00	0.05	0.05	0.05	169.33
Bldg. 535	Emer. Generator	114139	7.49	0.50	4.33	0.01	0.25	0.25	0.25	926.41	14.98	1.00	8.66	0.02	0.50	0.50	0.50	1852.81
Bldg. 542	Emer. Generator	114059	0.85	0.12	0.37	0.00	0.12	0.12	0.12	68.71	1.70	0.25	0.75	0.00	0.24	0.24	0.24	137.43
Bldg. 544	Emer. Generator	114047	3.79	0.25	2.19	0.01	0.13	0.13	0.13	468.72	7.58	0.51	4.38	0.01	0.25	0.25	0.25	937.45
Bldg. 549	Emer. Generator	114046	2.90	0.19	1.67	0.00	0.10	0.10	0.10	358.29	5.79	0.39	3.35	0.01	0.19	0.19	0.19	716.58
Bldg. 551	Emer. Generator	114045	8.15	0.65	1.76	0.00	0.57	0.57	0.57	322.71	16.30	1.30	3.51	0.01	1.14	1.14	1.14	645.42
Bldg. 553	Emer. Generator	114064	0.73	0.06	0.52	0.00	0.02	0.02	0.02	78.53	1.47	0.11	1.04	0.00	0.04	0.04	0.04	157.06
Bldg. 554	Emer. Generator	394712	0.50	0.03	0.56	0.00	0.02	0.02	0.02	84.66	1.00	0.06	1.13	0.00	0.05	0.05	0.05	169.33
Bldg. 555	Emer. Generator	114033	11.00	0.88	2.37	0.00	0.77	0.77	0.77	435.60	22.01	1.75	4.74	0.01	1.53	1.53	1.53	871.19
Bldg. 556	Emer. Generator	114044	8.59	0.68	1.85	0.00	0.60	0.60	0.60	339.89	17.17	1.37	3.70	0.01	1.20	1.20	1.20	679.77
Bldg. 557	Emer. Generator	114043	7.89	1.14	9.73	0.01	0.46	0.46	0.46	636.83	15.79	2.29	19.45	0.01	0.92	0.92	0.92	1273.66
Bldg. 558	Emer. Generator	114130	0.97	0.07	1.28	0.00	0.05	0.05	0.05	192.64	1.94	0.14	2.56	0.00	0.10	0.10	0.10	385.29
Bldg. 561	Emer. Generator	114070	0.73	0.06	0.52	0.00	0.02	0.02	0.02	78.53	1.47	0.11	1.04	0.00	0.04	0.04	0.04	157.06
Bldg. 562	Emer. Generator	114038	3.15	0.46	3.88	0.00	0.18	0.18	0.18	253.99	6.30	0.91	7.76	0.01	0.37	0.37	0.37	507.99
Bldg. 565	Emer. Generator	114042	11.62	0.93	2.50	0.00	0.81	0.81	0.81	460.14	23.25	1.85	5.01	0.01	1.62	1.62	1.62	920.27

Building	Operator ID	Device ID	NOx (lb/hr)	ROC (lb/hr)	CO (lb/hr)	SOx (lb/hr)	PM (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	GHG (lb/hr)	NOx (lb/day)	ROC (lb/day)	CO (lb/day)	SOx (lb/day)	PM (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	GHG (lb/day)
Bldg. 568	Emer. Generator	114041	5.15	0.41	1.11	0.00	0.36	0.36	0.36	203.69	10.29	0.82	2.22	0.00	0.72	0.72	0.72	407.37
Bldg. 571	Emer. Generator	114040	11.39	1.65	14.04	0.01	0.66	0.66	0.66	919.04	22.79	3.30	28.07	0.02	1.32	1.32	1.32	1838.09
Bldg. 572	Emer. Generator	114039	11.48	1.66	14.15	0.01	0.67	0.67	0.67	926.41	22.97	3.33	28.30	0.02	1.33	1.33	1.33	1852.81
Bldg. 574	Emer. Generator	394714	0.50	0.03	0.56	0.00	0.02	0.02	0.02	84.66	1.00	0.06	1.13	0.00	0.05	0.05	0.05	169.33
Bldg. 574	Emer. Generator	114037	9.27	0.74	2.00	0.00	0.65	0.65	0.65	366.88	18.54	1.48	3.99	0.01	1.29	1.29	1.29	733.76
Bldg. 585	Emer. Generator	114036	23.00	1.83	4.96	0.01	1.60	1.60	1.60	910.45	46.00	3.66	9.91	0.02	3.21	3.21	3.21	1820.91
Bldg. 588	Emer. Generator	388960	1.94	0.14	1.81	0.00	0.10	0.10	0.10	386.51	3.89	0.28	3.61	0.01	0.21	0.21	0.21	773.03
Bldg. 615	Emer. Generator	114035	5.78	0.84	7.12	0.01	0.34	0.34	0.34	466.27	11.56	1.68	14.24	0.01	0.67	0.67	0.67	932.54
Bldg. 657	Emer. Generator	114034	27.59	2.20	5.95	0.01	1.92	1.92	1.92	1092.06	55.17	4.40	11.89	0.02	3.85	3.85	3.85	2184.11
Bldg. 860	Emer. F/W Pump	114029																
Bldg. 860	Emer. Generator	114060	5.58	0.81	6.88	0.00	0.32	0.32	0.32	450.32	11.17	1.62	13.75	0.01	0.65	0.65	0.65	900.64
Bldg. 1861	Emer. Generator	388928	1.75	0.13	1.63	0.00	0.09	0.09	0.09	348.48	3.51	0.25	3.26	0.01	0.19	0.19	0.19	696.95
Portable	Emer. Water Pump	388929	1.12	0.10	0.92	0.00	0.05	0.05	0.05	138.65	2.24	0.20	1.84	0.00	0.11	0.11	0.11	277.31
Total			**340.27**	**34.82**	**242.86**	**0.29**	**19.72**	**19.72**	**19.72**	**26610.56**	**680.54**	**69.63**	**485.72**	**0.58**	**39.45**	**39.45**	**39.45**	**53221.12**

Note – Device 114029 is an emergency fire/water pump diesel engine and does not have hourly or annual emission limits.

Table 5.8: Long Term Potential to Emit – Reciprocating Internal Combustion

Bldg	Operator ID	Device ID	NOx (ton/ qtr)	ROC (ton/ qtr)	CO (ton/ qtr)	SOx (ton/ qtr)	PM (ton/ qtr)	PM10 (ton/ qtr)	PM2.5 (ton/ qtr)	GHG (ton/ qtr)	NOx (ton/ yr)	ROC (ton/ yr)	CO (ton/ yr)	SOx (ton/ yr)	PM (ton/ yr)	PM10 (ton/ yr)	PM2.5 (ton/ yr)	GHG (ton/ year)
Bldg. 205	Emer. Generator	114058	0.05	0.01	0.06	0.00	0.00	0.00	0.00	3.67	0.05	0.01	0.06	0.00	0.00	0.00	0.00	3.67
Bldg. 221	Emer. Generator	114030	0.12	0.01	0.07	0.00	0.00	0.00	0.00	14.42	0.12	0.01	0.07	0.00	0.00	0.00	0.00	14.42
Bldg. 225	Emer. Generator	114057	0.23	0.03	0.28	0.00	0.01	0.01	0.01	18.28	0.23	0.03	0.28	0.00	0.01	0.01	0.01	18.28
Bldg. 226	Emer. Generator	393553	0.04	0.00	0.04	0.00	0.00	0.00	0.00	8.62	0.04	0.00	0.04	0.00	0.00	0.00	0.00	8.62
Bldg. 235	Emer. Generator	114056	0.12	0.02	0.14	0.00	0.01	0.01	0.01	9.42	0.12	0.02	0.14	0.00	0.01	0.01	0.01	9.42
Bldg. 250	Emer. Generator	114055	0.02	0.00	0.03	0.00	0.00	0.00	0.00	1.87	0.02	0.00	0.03	0.00	0.00	0.00	0.00	1.87
Bldg. 266	Emer. Generator	114054	0.33	0.05	0.41	0.00	0.02	0.02	0.02	26.65	0.33	0.05	0.41	0.00	0.02	0.02	0.02	26.65
Bldg. 276	Emer. Generator	114071	0.06	0.00	0.06	0.00	0.00	0.00	0.00	12.21	0.06	0.00	0.06	0.00	0.00	0.00	0.00	12.21
Bldg. 503	Emer. Generator	114134	0.20	0.01	0.11	0.00	0.01	0.01	0.01	24.48	0.20	0.01	0.11	0.00	0.01	0.01	0.01	24.48
Bldg. 506	Emer. Generator	395544	0.02	0.00	0.03	0.00	0.00	0.00	0.00	3.95	0.02	0.00	0.03	0.00	0.00	0.00	0.00	3.95
Bldg. 511	Emer. Generator	114052	0.02	0.00	0.01	0.00	0.00	0.00	0.00	2.09	0.02	0.00	0.01	0.00	0.00	0.00	0.00	2.09
Bldg. 512	Emer. Generator	388947	0.47	0.03	0.27	0.00	0.02	0.02	0.02	57.70	0.47	0.03	0.27	0.00	0.02	0.02	0.02	57.70
Bldg. 515	Emer. Generator	114051	0.23	0.02	0.05	0.00	0.02	0.02	0.02	9.20	0.23	0.02	0.05	0.00	0.02	0.02	0.02	9.20
Bldg. 516	Emer. Generator	114050	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.83
Bldg. 520	Emer. Generator	114049	0.11	0.02	0.14	0.00	0.01	0.01	0.01	9.26	0.11	0.02	0.14	0.00	0.01	0.01	0.01	9.26

Bldg	Operator ID	Device ID	NOx (ton/ qtr)	ROC (ton/ qtr)	CO (ton/ qtr)	SOx (ton/ qtr)	PM (ton/ qtr)	PM10 (ton/ qtr)	PM2.5 (ton/ qtr)	GHG (ton/ qtr)	NOx (ton/ yr)	ROC (ton/ yr)	CO (ton/ yr)	SOx (ton/ yr)	PM (ton/ yr)	PM10 (ton/ yr)	PM2.5 (ton/ yr)	GHG (ton/ year)
Bldg. 521	Emer. Generator	114048	0.05	0.00	0.03	0.00	0.00	0.00	0.00	6.56	0.05	0.00	0.03	0.00	0.00	0.00	0.00	6.56
Bldg. 525	Emer. Generator	386852	0.19	0.01	0.11	0.00	0.01	0.01	0.01	23.37	0.19	0.01	0.11	0.00	0.01	0.01	0.01	23.37
Bldg. 526	Emer. Generator	393041	0.02	0.00	0.02	0.00	0.00	0.00	0.00	2.94	0.02	0.00	0.02	0.00	0.00	0.00	0.00	2.94
Bldg. 529	Emer. Generator	393551	0.05	0.00	0.05	0.00	0.00	0.00	0.00	9.94	0.05	0.00	0.05	0.00	0.00	0.00	0.00	9.94
Bldg. 529	Emer. Generator	393552	0.05	0.00	0.05	0.00	0.00	0.00	0.00	9.94	0.05	0.00	0.05	0.00	0.00	0.00	0.00	9.94
Bldg. 531	Emer. Generator	394710	0.01	0.00	0.01	0.00	0.00	0.00	0.00	2.12	0.01	0.00	0.01	0.00	0.00	0.00	0.00	2.12
Bldg. 535	Emer. Generator	114139	0.19	0.01	0.11	0.00	0.01	0.01	0.01	23.16	0.19	0.01	0.11	0.00	0.01	0.01	0.01	23.16
Bldg. 542	Emer. Generator	114059	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.69
Bldg. 544	Emer. Generator	114047	0.04	0.00	0.02	0.00	0.00	0.00	0.00	4.69	0.04	0.00	0.02	0.00	0.00	0.00	0.00	4.69
Bldg. 549	Emer. Generator	114046	0.03	0.00	0.02	0.00	0.00	0.00	0.00	3.58	0.03	0.00	0.02	0.00	0.00	0.00	0.00	3.58
Bldg. 551	Emer. Generator	114045	0.08	0.01	0.02	0.00	0.01	0.01	0.01	3.23	0.08	0.01	0.02	0.00	0.01	0.01	0.01	3.23
Bldg. 553	Emer. Generator	114064	0.02	0.00	0.01	0.00	0.00	0.00	0.00	1.96	0.02	0.00	0.01	0.00	0.00	0.00	0.00	1.96
Bldg. 554	Emer. Generator	394712	0.01	0.00	0.01	0.00	0.00	0.00	0.00	2.12	0.01	0.00	0.01	0.00	0.00	0.00	0.00	2.12
Bldg. 555	Emer. Generator	114033	0.11	0.01	0.02	0.00	0.01	0.01	0.01	4.36	0.11	0.01	0.02	0.00	0.01	0.01	0.01	4.36
Bldg. 556	Emer. Generator	114044	0.09	0.01	0.02	0.00	0.01	0.01	0.01	3.40	0.09	0.01	0.02	0.00	0.01	0.01	0.01	3.40
Bldg. 557	Emer. Generator	114043	0.08	0.01	0.10	0.00	0.00	0.00	0.00	6.37	0.08	0.01	0.10	0.00	0.00	0.00	0.00	6.37
Bldg. 558	Emer. Generator	114130	0.02	0.00	0.03	0.00	0.00	0.00	0.00	4.82	0.02	0.00	0.03	0.00	0.00	0.00	0.00	4.82
Bldg. 561	Emer. Generator	114070	0.02	0.00	0.01	0.00	0.00	0.00	0.00	1.96	0.02	0.00	0.01	0.00	0.00	0.00	0.00	1.96

Bldg	Operator ID	Device ID	NOx (ton/ qtr)	ROC (ton/ qtr)	CO (ton/ qtr)	SOx (ton/ qtr)	PM (ton/ qtr)	PM10 (ton/ qtr)	PM2.5 (ton/ qtr)	GHG (ton/ qtr)	NOx (ton/ yr)	ROC (ton/ yr)	CO (ton/ yr)	SOx (ton/ yr)	PM (ton/ yr)	PM10 (ton/ yr)	PM2.5 (ton/ yr)	GHG (ton/ year)
Bldg. 562	Emer. Generator	114038	0.03	0.00	0.04	0.00	0.00	0.00	0.00	2.54	0.03	0.00	0.04	0.00	0.00	0.00	0.00	2.54
Bldg. 565	Emer. Generator	114042	0.12	0.01	0.03	0.00	0.01	0.01	0.01	4.60	0.12	0.01	0.03	0.00	0.01	0.01	0.01	4.60
Bldg. 568	Emer. Generator	114041	0.05	0.00	0.01	0.00	0.00	0.00	0.00	2.04	0.05	0.00	0.01	0.00	0.00	0.00	0.00	2.04
Bldg. 571	Emer. Generator	114040	0.11	0.02	0.14	0.00	0.01	0.01	0.01	9.19	0.11	0.02	0.14	0.00	0.01	0.01	0.01	9.19
Bldg. 572	Emer. Generator	114039	0.11	0.02	0.14	0.00	0.01	0.01	0.01	9.26	0.11	0.02	0.14	0.00	0.01	0.01	0.01	9.26
Bldg. 574	Emer. Generator	394714	0.01	0.00	0.01	0.00	0.00	0.00	0.00	2.12	0.01	0.00	0.01	0.00	0.00	0.00	0.00	2.12
Bldg. 574	Emer. Generator	114037	0.09	0.01	0.02	0.00	0.01	0.01	0.01	3.67	0.09	0.01	0.02	0.00	0.01	0.01	0.01	3.67
Bldg. 585	Emer. Generator	114036	0.23	0.02	0.05	0.00	0.02	0.02	0.02	9.10	0.23	0.02	0.05	0.00	0.02	0.02	0.02	9.10
Bldg. 588	Emer. Generator	388960	0.05	0.00	0.05	0.00	0.00	0.00	0.00	9.66	0.05	0.00	0.05	0.00	0.00	0.00	0.00	9.66
Bldg. 615	Emer. Generator	114035	0.06	0.01	0.07	0.00	0.00	0.00	0.00	4.66	0.06	0.01	0.07	0.00	0.00	0.00	0.00	4.66
Bldg. 657	Emer. Generator	114034	0.28	0.02	0.06	0.00	0.02	0.02	0.02	10.92	0.28	0.02	0.06	0.00	0.02	0.02	0.02	10.92
Bldg. 860	Emer. F/W Pump	114029																
Bldg. 860	Emer. Generator	114060	0.06	0.01	0.07	0.00	0.00	0.00	0.00	4.50	0.06	0.01	0.07	0.00	0.00	0.00	0.00	4.50
Bldg. 1861	Emer. Generator	388928	0.04	0.00	0.04	0.00	0.00	0.00	0.00	8.71	0.04	0.00	0.04	0.00	0.00	0.00	0.00	8.71
Portable	Emer. Water Pump	388929	0.02	0.00	0.01	0.00	0.00	0.00	0.00	2.08	0.02	0.00	0.01	0.00	0.00	0.00	0.00	2.08
Total			**4.36**	**0.41**	**3.09**	**0.00**	**0.23**	**0.23**	**0.23**	**400.93**	**4.36**	**0.41**	**3.09**	**0.00**	**0.23**	**0.23**	**0.23**	**400.93**

Note – Device 114029 is an emergency fire/water pump diesel engine and does not have hourly or annual emission limits

Table 5.9: Facility Permitted Emissions

A. Daily - lbs

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	PM2.5	GHG
External Combustion	199.05	24.57	969.31	62.31	34.13	34.13	34.13	532,357.49
Internal Combustion	678.30	69.43	483.88	0.57	39.34	39.34	39.34	52,943.81
Coatings	--	2.91	--	--	--	--	--	--
Storage Tanks	--	0.58	--	--	--	--	--	--
Dispensing Facilities	--	1.05	--	--	--	--	--	--
Totals (lb/day)	**877.35**	**98.54**	**1,453.19**	**62.88**	**73.46**	**73.46**	**73.46**	**585,301.30**

B. Annual - tons

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	PM2.5	GHG
External Combustion	35.89	4.47	176.94	11.33	6.20	6.20	6.20	96,770.90
Internal Combustion	4.34	0.41	3.07	0.00	0.23	0.23	0.23	398.85
Coatings	--	0.38	--	--	--	--	--	--
Storage Tank	--	0.11	--	--	--	--	--	--
Dispensing Facilities	--	0.19	--	--	--	--	--	--
Totals (TPY)[1]	**40.23**	**5.56**	**180.01**	**11.33**	**6.44**	**6.44**	**6.44**	**97,169.74**

[1] Tons are reported as short tons.

Table 5.10: Federal Potential To Emit

A. Daily - lbs

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	PM2.5	GHG
External Combustion	199.05	24.57	969.31	62.31	34.13	34.13	34.13	532,357.49
Internal Combustion	678.30	69.43	483.88	0.57	39.34	39.34	39.34	52,943.81
Coatings	--	2.91	--	--	--	--	--	--
Storage Tanks	--	0.58	--	--	--	--	--	--
Dispensing Facilities	--	1.05	--	--	--	--	--	--
Totals (lb/day)	**877.35**	**98.54**	**1,453.19**	**62.88**	**73.46**	**73.46**	**73.46**	**585,301.30**

B. Annual - tons

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	PM2.5	GHG
External Combustion	35.89	4.47	176.94	11.33	6.20	6.20	6.20	96,002.21
Internal Combustion	4.34	0.41	3.07	0.00	0.23	0.23	0.23	398.85
Coatings	--	0.38	--	--	--	--	--	--
Storage Tank	--	0.11	--	--	--	--	--	--
Dispensing Facilities	--	0.19	--	--	--	--	--	--
Exempt Emissions	70.11	6.87	72.94	10.54	5.90	5.90	5.90	90,099.49
Totals (TPY)[1]	**110.34**	**12.43**	**252.95**	**21.88**	**12.34**	**12.34**	**12.34**	**186,500.54**

[1] Tons are reported as short tons.

Table 5.11: HAP Emission Factors

Equipment Category	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Chlorobenzene	Ethyl Benzene	Formaldehyde	Hexane	Hydrochloric Acid	PAHs	Toluene	Xylenes	Units	References
NG Boilers/Heaters <10 MMBtu	0.0002	0.0000	0.0011	0.0014	0.0001	0.0005	0.0004	0.0003	0.0021	0.0000	0.0043	0.0027	0.0080	--	--	0.0095	0.0170	0.0063	--	0.0004	0.0366	0.0272	lb/MMcf	A
Stationary Diesel IC Engines	0.0016	--	0.0015	0.0006	--	0.0083	0.0031	0.0020	0.0039	0.0022	0.7833	0.0339	0.1863	0.2174	0.0002	0.0109	1.7261	0.0269	0.1863	0.0559	0.1054	0.0424	lb/kgal	B
Gasoline Dispensing/Storage																								
Liquid	--	--	--	--	--	--	--	--	--	--	--	--	0.010	--	--	--	--	--	--	--	--	--	lb/lb-ROC	C
Vapor	--	--	--	--	--	--	--	--	--	--	--	--	0.003	--	--	--	--	--	--	--	--	--	lb/lb-ROC	C
Coating/Solvent Usage	--	--	--	--	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	0.05	0.05	lb/lb-ROC	D

References:

A1 - VCAPCD, AB 2588 Combustion Emission Factors (2001) - Natural Gas Fired External Combustion Equipment (<10 MMBTUh)
A2 - USEPA, AP-42 Chapter 1.4 (1998) - Table 1.4-4. Emission Factors for Metals from Natural Gas Combustion
A3 - USEPA, AP-42 Chapter 1.4 (1998) - Table 1.4-2. Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion
B1 - VCAPCD, AB 2588 Combustion Emission Factors (2001) - Diesel Combustion Factors Table - internal combustion
B2 - SCAQMD, Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory (2016) - Table B-2: Default EF for Diesel/Distillate Oil Fuel Combustion
C - SBCAPCD, Gasoline Station Health Risk Assessment Application Form-25T (2020) - Attachment B: ROC and Benzene Emissions
D - APCD: Solvents assumed to contain 5% benzene, 5% toluene, 5% xylenes

Notes:

1. HAP emissions from coating/solvent usage will be updated in the next PTO reevaluation after the emission calculations for 2018 are finalized under the AB 2588 program.

Table 5.12: Boiler HAP Emissions (TPY)

Building	Operator ID	Device ID	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	Acetaldehyde	Acrolein	Benzene	Ethyl Benzene	Formaldehyde	Hexane	PAHs	Toluene	Xylenes	Total
Bldg. 221	Boiler #B1	114076	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 225	Boiler #B1	388327	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 225	Boiler #B2	388328	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 225	Boiler #B3	388329	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 235	Boiler #B1	394764	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 235	Boiler B2	393445	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 266	Boiler B1	393026	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 266	Boiler B2	393027	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 266	Boiler #B3	114063	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 276	Boiler #B1	114128	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 276	Boiler #B2	114129	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 479	Boiler #B1	114112	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 479	Boiler #B2	114113	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 503	Boiler #B1	388948	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 503	Boiler B2	386140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 503	Boiler B3	386141	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 503	Boiler B4	386142	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 503	Boiler B5	386143	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 503	Boiler B6	386144	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 503	Boiler B7	386145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 505	Boiler #B1	393029	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 505	Boiler #B2	393030	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 512	Boiler #B1	394908	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 512	Boiler #B2	394910	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 512	Boiler #B6	388933	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 512	Boiler #B7	388935	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 512	Boiler #B8	388936	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 512	Boiler #B9	388937	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 512	Boiler #B10	388938	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 512	Boiler #B11	388939	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 512	Boiler #B12	388940	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 512	Boiler #B13	388941	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 515	Boiler #B1	114092	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 515	Boiler #B2	114093	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 515	Boiler #B3	114094	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 516	Boiler #B5	393622	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 516	Boiler #B6	363623	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 516	Boiler #B7	393624	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 520	Boiler #B1	114084	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 521	Boiler #B1	114085	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 525	Boiler #B1	393439	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 525	Boiler #B2	393440	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 526	Boiler #B1	387978	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 526	Boiler #B2	387979	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 528	Boiler #B1	393266	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 528	Boiler #B2	387629	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 533	Boiler #B1	387980	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 533	Boiler #B2	387981	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 533	Boiler #B3	387983	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 533	Boiler #B4	387982	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 534	Boiler B-1	114710	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 534	Boiler #B-2	114711	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 534	Boiler B1	393444	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 535	Boiler #B1	114109	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**

Bldg. 542	Boiler B-1	114712	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 542	Boiler B-2	114713	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 544	Boiler #B1	114079	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 544	Boiler #B2	114080	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 549	Boiler #B1	393267	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 549	Boiler #B2	393268	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 551	Boiler B1	393269	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 551	Boiler B2	393270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 552	Boiler #B1	393593	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 552	Boiler #B2	393594	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 553	Boiler #B1	393625	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 553	Boiler #B2	393626	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 554	Boiler #B1	393442	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 554	Boiler #B2	393443	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 558	Boiler #B1	393447	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 558	Boiler #B2	393448	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg 560	Boiler #B2	387971	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 560	Boiler #B1	393441	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 561	Boiler #B1	114131	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 561	Boiler #B2	114132	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 562	Boiler B6	391529	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 562	Boiler B1	114251	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 562	Boiler B2	114252	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 562	Boiler B3	395683	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 562	Boiler B2	395684	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 563	Boiler #B1	114124	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 563	Boiler #B2	114125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 564	Boiler #B1	114110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 571	Boiler #B1	114135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 571	Boiler #B2	114136	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 571	Boiler #B3	114137	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 571	Boiler #B4	114138	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 588	Boiler #B1	114127	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 588	Boiler #B2	393200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 615	Boiler #B1	393446	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 657	Boiler #B1	394662	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 657	Boiler #B2	386829	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 860	Boiler B-1	393008	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 860	Boiler B-2	393011	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 860	Boiler B-3	393012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
		Totals:	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.01**	**0.01**	**0.00**	**0.00**	**0.03**	**0.02**	**0.09**

Notes:
1. These are estimates only, and are not intended to represent emission limits.
2. Because of rounding, values in these tables shown as 0.00 are less than 0.005, but greater than zero.
3. Natural gas emission calculations are based on a heating value of 1050 BTU/scf.

Table 5.13: Engine HAP Emissions (TPY)

Building	Operator ID	Device ID	Arsenic	Cadmium	Chromium	Lead	Manganese	Mercury	Nickel	Selenium	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Chlorobenzene	Ethyl Benzene	Formaldehyde	Hexane	Hydrochloric Acid	PAHs	Toluene	Xylenes	Total
Bldg. 205	Emer. Generator	114058	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 221	Emer. Generator	114030	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 225	Emer. Generator	114057	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 226	Emer. Generator	393553	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 235	Emer. Generator	114056	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 250	Emer. Generator	114055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 266	Emer. Generator	114054	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 276	Emer. Generator	114071	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 503	Emer. Generator	114134	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 506	Emer. Generator	395544	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 511	Emer. Generator	114052	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 512	Emer. Generator	388947	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.01**
Bldg. 515	Emer. Generator	114051	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 516	Emer. Generator	114050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 520	Emer. Generator	114049	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 521	Emer. Generator	114048	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 525	Emer. Generator	386852	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 526	Emer. Generator	393041	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 529	Emer. Generator	393551	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 529	Emer. Generator	393552	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 531	Emer. Generator	394710	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 535	Emer. Generator	114139	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 542	Emer. Generator	114059	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 544	Emer. Generator	114047	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 549	Emer. Generator	114046	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 551	Emer. Generator	114045	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 553	Emer. Generator	114064	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 554	Emer. Generator	394712	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 555	Emer. Generator	114033	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 556	Emer. Generator	114044	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 557	Emer. Generator	114043	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 558	Emer. Generator	114130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 561	Emer. Generator	114070	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 562	Emer. Generator	114038	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 565	Emer. Generator	114042	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 568	Emer. Generator	114041	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 571	Emer. Generator	114040	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 572	Emer. Generator	114039	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 574	Emer. Generator	394714	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 574	Emer. Generator	114037	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 585	Emer. Generator	114036	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 588	Emer. Generator	388960	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 615	Emer. Generator	114035	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 657	Emer. Generator	114034	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 860	Emer. F/W Pump	114029	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 860	Emer. Generator	114060	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Bldg. 1861	Emer. Generator	388928	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Portable	Emer. Water Pump	388929	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
		Totals:	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.06

Notes:
1. These are estimates only, and are not intended to represent emission limits.
2. Because of rounding, values in these tables shown as 0.00 are less than 0.005, but greater than zero.
3. Default fuel properties for diesel are from Tables 5 and 6 of the SBCAPCD's Piston IC Engine Technical Reference Document (2002), available at https://www.ourair.org/wp-content/uploads/sbcapcdicerefdoc.pdf.
4. The firewater pump (Device #114029) does not have a permitted limit on annual usage; the HAP emissions for this engine were calculated based on the average annual maintenance & testing usage from 2017 through 2019.

Table 5.14: Other HAP Emissions (TPY)

Equipment Category	Benzene	Toluene	Xylenes	Total
Gasoline Dispensing/Storage				
Liquid	0.00	--	--	**0.00**
Vapor	0.00	--	--	**0.00**
Gasoline Dispensing/Storage Totals:	**0.00**	**0.00**	**0.00**	**0.00**
Coating/Solvent Usage Totals:	**0.02**	**0.02**	**0.02**	**0.06**

Notes:

1. These are estimates only, and are not intended to represent emission limits.
2. Because of rounding, values in these tables shown as 0.00 are less than 0.005, but greater than zero.

Table 5.15: Total HAP Emissions (TPY)

Equipment Category	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Chlorobenzene	Ethyl Benzene	Formaldehyde	Hexane	Hydrochloric Acid	PAHs	Toluene	Xylenes	**Total - All HAPs**
Boilers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.03	0.02	**0.09**
Engines	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	**0.06**
Gasoline Dispensing/S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Coating/Solvent Usag	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	**0.06**
Total for each HAP:	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**0.00**	**0.03**	**0.00**	**0.00**	**0.01**	**0.05**	**0.01**	**0.00**	**0.00**	**0.05**	**0.04**	**0.21**

Notes:
1. These are estimates only, and are not intended to represent emission limits.
2. Because of rounding, values in these tables shown as 0.00 are less than 0.005, but greater than zero.

Table 5.16: Coatings Operating Limits

Operating Limits					
Coatings	Location	Device ID	hours/day	hours/qrt	hours/year
Automatic Type Spray Booth	Paint Shop	114068	24	2190	8760
Benchtop Spray Booth	Bldg. 223	390201	24	2190	8760
Coating Operations	Various	387790	24	2190	8760

Table 5.17: Fueling Station Operating Limits

Operating Limits							
Gasoline Tank	Location	Device ID	VRS	CARB Executive Order	gal/day	gal/qtr	gal/year
Gasoline Dispenser	Bldg. 555	114066	Phase II	G-70-102-A	--	--	20,000
Storage Tank	Bldg. 555	114067	Phase I	None	--	--	20,000
Fuel Dispenser	Bldg. 336	394768	Phase II	G-70-116-F	--	--	240,000
Storage Tank	Bldg. 336	386943	Phase I	VR-401-C	--	--	240,000

Table 5.18: Exempt Boiler Emissions

Heat input total (MMBtu/hr) for uncontrolled units (.075-.4 MMBtu/hr)	Emission Factors (lb/MMBtu)[1]						short term emissions					
	NOx	ROC	CO	SOX	PM	GHG	NOx lb/day	ROC lb/day	CO lb/day	Sox lb/day	Pm lb/day	GHG
15.258	0.092	0.0054	0.039	0.0137	0.0075	117	33.69	1.98	14.28	5.02	2.75	42844.46

Heat input total (MMBtu/hr) for Rule 360 units (.075-.4 MMBtu/hr)	Emission Factors (lb/MMBtu)[2]						short term emissions					
	NOx	ROC	CO	SOX	PM	GHG	NOx lb/day	ROC lb/day	CO lb/day	Sox lb/day	Pm lb/day	GHG
12.275	0.066	0.0054	0.039	0.0137	0.0075	117	19.44	1.59	11.49	4.04	2.21	34468.20

Heat input total (MMBtu/hr) for uncontrolled units (.4-2 MMBtu/hr)	Emission Factors (lb/MMBtu)[3]						short term emissions					
	NOx	ROC	CO	SOX	PM	GHG	NOx lb/day	ROC lb/day	CO lb/day	Sox lb/day	Pm lb/day	GHG
54.229	0.098	0.0054	0.082	0.0137	0.0075	117	127.55	7.03	106.72	17.83	9.76	152275.03

Heat input total (MMBtu/hr) for Rule 360 units (.4-2 MMBtu/hr)	Emission Factors (lb/MMBtu)[4]						short term emissions					
	NOx	ROC	CO	SOX	PM	GHG	NOx lb/day	ROC lb/day	CO lb/day	Sox lb/day	Pm lb/day	GHG
23.545	0.036	0.0054	0.297	0.0137	0.0075	117	20.34	3.05	167.83	7.74	4.24	66114.36

Equipment split into four groups with specific emission factors from AP42 and Rule 360

Total Long Term Emissions (TPY)					
NOx	**ROC**	**CO**	**SOx**	**PM**	**GHG**
36.69	**2.49**	**54.81**	**6.32**	**3.46**	**53965.63**

Notes
[1]Units rated less than or equal to .4 MMBtu/hr with a manufacture year of 2003 or earlier used AP42 uncontrolled EF's for units rated between 0.075 - 0.40 MMBtu/hr
[2]Units rated less than or equal to .4 MMBtu/hr with a manufacture year of 2004 or greater used Rule 360 EF's for units rated between 0.075 - 0.40 MMBtu/hr
[3]Units rated greater than .4MMBtu/hr with a manufacture year of 2003 or earlier used AP42 uncontrolled EF's for units rated between 0.4 - 2.0 MMBtu/hr
[4]Units rated greater than .4 MMBtu/hr with a manufacture year of 2004 or greater used Rule 360 EF's for units rated between 0.4 - 2.0 MMBtu/hr

Table 5.19: Exempt Furnace Emissions

Emission Factors (lb/MMBtu)					
NOx	ROC	CO	SOX	PM	GHG
0.092	0.0054	0.039	0.0137	0.0075	117

EF based on AP42 emission factor estimates for furnaces with heat input < 0.3 MMBtu/hr

assuming operation 24hrs per day 365 hrs per year

total heat input (MMBtu/hr):	11.681

short term emissions (lb/day)					
NOx	ROC	CO	SOx	PM	GHG
25.79	1.51	10.93	3.84	2.10	32800.25

Long Term Emissions (TPY)					
NOx	ROC	CO	Sox	PM	GHG
4.71	0.28	2.00	0.70	0.38	5986.05

Table 5.20: Exempt Residential Water Heater Emissions

Heat input total (mmbtu/hr)	uncontrolled emission factors (lb/MMBtu)					
	NOx	ROC	CO	SOx	PM	GHG
51.071	0.092	0.0054	0.039	0.0137	0.0075	117

Note* Assuming operation 24hr per day, 365 days per year
emission factors are AP42 uncontrolled factors for boilers rated between .075-.4 MMBtu/hr

short term emissions (lb/day)					
Nox	ROC	CO	SOx	PM	GHG
112.76	6.62	47.80	16.79	9.19	143407.37

Long Term Emissions (TPY)					
NOx	ROC	CO	SOx	PM	GHG
20.58	1.21	8.72	3.06	1.68	26171.84

Table 5.21: Exempt Kiln Emissions

Heat input total (mmbtu/hr)	uncontrolled emission factors (lb/MMBtu)[1]					
	NOx	ROC	CO	SOX	PM	GHG
1.420	0.092	0.0054	0.039	0.0137	0.0075	117

short term emissions (lb/day)					
Nox	ROC	CO	Sox	PM	GHG
3.14	0.18	1.33	0.47	0.26	3987.36

Long Term Emissions (TPY)					
Nox	**ROC**	**CO**	**Sox**	**PM**	**GHG**
0.57	**0.03**	**0.24**	**0.09**	**0.05**	**727.69**

[1] Emissions are based on AP42 uncontrolled EF's for small boiler units rated between 0.075 - 0.40 MMBtu/hr

Table 5.22: Exempt Generator Emissions

HP total for Diesel fired Engines	[2]Emission Factors (g/bhp-hr)					
	NOx	ROC	CO	SOX	PM	GHG
228.000	14.1	1.12	3	0.183	1	557

Long Term Emissions (TPY)					
Nox	ROC	CO	Sox	PM	GHG
1.77	0.14	0.38	0.02	0.13	69.99

HP total for Natural Gas fired Engines	[3]Emission Factors (g/bhp-hr)					
	NOx	ROC	CO	SOX	PM	GHG
592.800	10.52	1.71	17.72	0.0028	0.045	557

Long Term Emissions (TPY)					
Nox	ROC	CO	Sox	PM	GHG
3.44	0.56	5.79	0.00	0.01	181.98

Total Long Term Emissions (TPY)					
Nox	**ROC**	**CO**	**Sox**	**PM**	**GHG**
5.21	**0.70**	**6.17**	**0.02**	**0.14**	**251.98**

Notes

[1] Engine HP esitmated using generator rating and estimated efficie

[2] Emission Factors for Diesel Engines are from AP42 Table 3.3-1 and 3.3-2 default factors

[3] Estimated natural gas emission factors based on BSFC for naturaly aspiring spark ignition engines of 10,500 BTU/bhp-hr and AP42 factors for uncontrolled 4 stroke rich burn natural gas-fired reciprocating engines. (AP 42 - 3.2).

GHG emissions based on mass balance and calculations from section 5.3 in PT70 PTO 13725

Assuming operation of 500 hrs per

Table 5.23: Exempt Kitchen Equipment Emissions

Total Heat Input (MMBtu/hr)	5.847				
Emission Factors (lb/MMBtu)					
NOx	ROC	CO	SOX	PM	GHG
0.09	0.01	0.04	0.01	0.01	117.00

short term emissions (lb/day)					
NOx	ROC	CO	SOx	PM	GHG
12.91	0.76	5.47	1.92	1.05	16418.10

Long Term Emissions (TPY)					
NOx	**ROC**	**CO**	**Sox**	**PM**	**GHG**
2.36	**0.14**	**1.00**	**0.35**	**0.19**	**2996.30**

EF based on AP42 emission factor estimates for furnaces with heat input < 0.3 MMBtu/hr
assuming operation 24hrs per day 365 hrs per year

Table 5.24: Exempt Laboratory Emissions

PolName	Pol	SumOfAnn PTE (Tons/Yr)	SumOfQuart PTE (Tons/Qtr)	SumOfDaily PTE (lbs/day)	SumOfHourly PTE (lbs/Hr)
Reactive Organic Gas	16113	2.027130243	0.506782561	49.08470636	2.045196098

Emissions are based on reported PTE for exempt equipment found in UCSB's title 5 application

6.0 AIR QUALITY IMPACT ANALYSES

6.1. Modeling

An air quality impact analysis has not been required for this stationary source.

6.2 Increments

An air quality increment analysis has not been required for this stationary source.

6.3 Monitoring

Air quality monitoring is not required for this stationary source.

6.4 Health Risk Assessment

The UCSB stationary source is subject to the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588). The facility is currently in the process of assessing their health risk through the AB 2588 process for the 2018 inventory year.

The facility's risk was last assessed for the 1994 inventory year. This risk assessment showed that the facility's risk was below significance thresholds. The calculated risks are listed below.

	UCSB Max Risks	Significance Threshold
Cancer Risk:	1.6/million	≥ 10/million
Chronic Non-Cancer Risk:	0.04	> 1
Acute Non-Cancer Risk:	0.30	> 1

In addition, cancer Health Risk Assessment (HRA) screenings were run for the ICE installations listed below. Based on the results, the emissions from each diesel internal combustion engine do not present a significant risk to the surrounding community. Detailed results of these assessments are provided in Attachment 10.6.

- 284 bhp diesel engine (Device #388928) provides electrical backup power to the Portola Dining Commons (Building 1861).

- 96 bhp diesel engine (Device #393041) provides electrical backup power to Webb Hall (Building 526).

- Two 324 bhp diesel engines (Device #393551 and 393552) provide electrical backup power to the Sewage Lift Station (Building 529).

- 281 bhp diesel engine (Device #393553) provides electrical backup power to Henley Hall (Building 226).

- 69 bhp diesel engine (Device #394710) provides electrical backup power to the Music and Lotte Lehmann Concert Hall Building (Building 531).

- 69 bhp diesel engine (Device #394712) provides electrical backup power to Theater and Dance East & Hatlen Theater Building (Building 554).

- 69 bhp diesel engine (Device #394714) provides electrical backup power to the Public Safety Building (Building 574).

- 161 bhp diesel engine (Device #395544) provides electrical backup power to the Interactive Learning Pavilion (Building 506).

7.0 CAP Consistency, Offset Requirements and ERCs

7.1 General

Santa Barbara County has not attained the state ozone ambient air quality standards. The County also does not meet the state PM10 ambient air quality standards. Therefore, emissions from all emission units at the stationary source and its constituent facilities must be consistent with the provisions of the USEPA and State approved Clean Air Plans (CAP) and must not interfere with progress toward attainment of state ambient air quality standards. Under District regulations, any modifications at the source that result in an emissions increase of any nonattainment pollutant exceeding 25 lbs/day must apply BACT Non-Attainment Review (NAR). Increases above offset thresholds will trigger offsets at the source or elsewhere so that there is a net air quality benefit for Santa Barbara County. These offset threshold levels are 240 lbs/day for all attainment pollutants and precursors (except carbon monoxide and PM2.5) and 25 tons/year for all nonattainment pollutants and precursors (except carbon monoxide and PM2.5).

7.2 Clean Air Plan

The 2007 Clean Air Plan, adopted by the District Board on August 16, 2007, addressed both federal and state requirements, serving as the maintenance plan for the federal eight-hour ozone standard and as the state triennial update required by the Health and Safety Code to demonstrate how the District will expedite attainment of the state eight-hour ozone standard. The plan was developed for Santa Barbara County as required by both the 1998 California Clean Air Act and the 1990 Federal Clean Air Act Amendments.

In December 2019 the District Board adopted the 2019 Ozone Plan. The 2019 Plan provides a three-year update to the Clean Air Plan. The 2019 Clean Air Plan therefore satisfies all state triennial planning requirements.

7.3 Emission Reduction Credits (ERCs)

There are no ERCs associated with this source.

7.4 Offset Requirements

Emission offsets are required when a facility is permitting a project with emissions in excess of District offset thresholds, as defined in Regulation VIII. During initial project permitting the provisions of this Regulation did not apply because the source was previously exempt from the District permit provisions, and permits were required specifically due to a loss of a permit exemption and new rules and regulations. There has been no requirement for offsets since the initial permits were issued. However, future projects to modify existing equipment or install new equipment may require offsets.

8.0 LEAD AGENCY PERMIT CONSISTENCY

To the best of the District's knowledge, no other governmental agency's permit requires air quality mitigation.

9.0 PERMIT CONDITIONS

This section lists the applicable permit conditions for the UCSB facility. Section 9 contains the permit's enforceable requirements.

9.A Standard Administrative Conditions

A1. **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all data, specifications and assumptions included with the application and supplements thereof (as documented in the District's project file) and the District's analyses under which this permit is issued as documented in the Permit Analyses prepared for and issued with the permit. [Ref: Rule 206]

A2. **Compliance.** Nothing contained within this permit shall be construed as allowing the violation of any local, state or federal rules, regulations, air quality standards or increments. [Ref: Rule 1303]

A3. **Severability.** In the event that any condition herein is determined to be invalid, all other conditions shall remain in force. [Ref: Rule 1303]

A4. **Conflict Between Permits.** The requirements or limits that are more protective of air quality shall apply if any conflict arises between the requirements and limits of this permit and any other permitting actions associated with the equipment permitted herein. [Ref: Rule 1303]

A5. **Reimbursement of Costs**. All reasonable expenses, as defined in District Rule 210, incurred by the District, District contractors, and legal counsel for all activities that follow the issuance of this permit, including but not limited to permit condition implementation, annual co and emergency response, directly and necessarily related to enforcement of the permit shall be reimbursed by UCSB as required by Rule 210. This includes any activities related to District review and approval of required plans and reports pursuant to Rule 210.C.3 (e.g. FUMP plan review and approval). [Ref*:* Rule 210]

A6. **Access to Records and Facilities.** As to any condition that requires for its effective enforcement the inspection of records or facilities by the District or its agents, the permittee shall make such records available or provide access to such facilities upon notice from the District. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A. [Ref: Rule 1303]

A7. **Emission Factor Revisions.** The District may update the emission factors for any calculation based on USEPA AP-42 or District emission factors at the next permit modification or permit reevaluation to account for USEPA and/or District revisions to the underlying emission factors. [Ref: Rule 1303]

A8. **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit or any Rule, Order, or Regulation may constitute grounds for revocation pursuant to California Health & Safety Code Section 42307 *et seq*. [Ref: Rule 1303]

A9. Compliance with Permit Conditions.

(a) The permittee shall comply with all permit conditions in Sections 9.A, 9.B and 9.C.

(b) This permit does not convey property rights or exclusive privilege of any sort.

(c) Any permit noncompliance with sections 9.A, 9.B, or 9.C constitutes a violation of the Clean Air Act and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application.

(d) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(e) A pending permit action or notification of anticipated noncompliance does not stay any permit condition.

(f) Within a reasonable time period, the permittee shall furnish any information requested by the Control Officer, in writing, for the purpose of determining:

(i) compliance with the permit, or

(ii) whether or not cause exists to modify, revoke and reissue, or terminate a permit or for an enforcement action.

(g) In the event that any condition herein is determined to be in conflict with any other condition contained herein, then, if principles of law do not provide to the contrary, the condition most protective of air quality and public health and safety shall prevail to the extent feasible.

[Ref: 40 CFR Part 70.6.(a)(6), District Rule 1303]

A10. Emergency Provisions. The permittee shall comply with the requirements of the District, Rule 505 (Upset/Breakdown rule), and/or District Rule 1303.F, whichever is applicable to the emergency situation. In order to maintain an affirmative defense under Rule 1303.F, the permittee shall provide the District, in writing, a "notice of emergency" within 2 working days of the emergency. The "notice of emergency" shall contain the information/documentation listed in Sections (1) through (5) of Rule 1303.F. [Re: 40 CFR 70.6(g), District Rule 1303]

A11. Compliance Plan.

(a) The permittee shall comply with all federally-enforceable requirements that become applicable during the permit term in a timely manner.

(b) For all applicable equipment, the permittee shall implement and comply with any specific compliance plan required under any federally-enforceable rules or standards.

[Ref: District Rule 1302]

A12. Right of Entry. The Regional Administrator of USEPA, the Control Officer, or their authorized representatives, upon the presentation of credentials, shall be permitted to enter upon the premises where a Part 70 Source is located or where records must be kept:

(a) To inspect the stationary source, including monitoring and control equipment, work practices, operations, and emission-related activity;

(b) To inspect and duplicate, at reasonable times, records required by this Permit to Operate;

(c) To sample substances or monitor emissions from the source or assess other parameters to assure compliance with the permit or applicable requirements, at reasonable times. Monitoring of emissions can include source testing.

[Ref: District Rule 1303]

A13. Permit Life. The Part 70 permit shall become invalid by December 1, 2026 unless a timely and complete renewal application is submitted to the District. Any operation of the source to which this Part 70 permit is issued beyond the expiration date of this Part 70 permit and without a valid Part 70 operating permit (or a complete Part 70 permit renewal application) shall be a violation of the CAAA, § 502(a) and 503(d) and of the District rules.

The permittee shall submit an application for renewal of the Part 70 permit not later than 6 months before the date of the permit expiration. Upon submittal of a timely and complete renewal application, the Part 70 permit shall remain in effect until the Control Officer issues or denies the renewal application. [Ref: District Rule 1304]

A14. Payment of Fees. The permittee shall reimburse the District for all its Part 70 permit processing and compliance expenses for the stationary source on a timely basis. Failure to reimburse on a timely basis shall be a violation of this permit and of applicable requirements and can result in forfeiture of the Part 70 permit. Operation without a Part 70 permit subjects the source to potential enforcement action by the District and the USEPA pursuant to section 502(a) of the Clean Air Act. [Ref: District Rules 1303 and 1304, 40 CFR 70.6(a)(7)]

A15. Deviation from Permit Requirements. The permittee shall submit a written report to the District documenting each and every deviation from the federally enforceable requirements of this permit or any applicable federal requirements within 7 days after discovery of the violation, but not later than 180 days after the date of occurrence. The report shall clearly document 1) the probable cause and extent of the deviation 2) equipment involved, 3) the quantity of excess pollutant emissions, if any, and 4) actions taken to correct the deviation. The requirements of this condition shall not apply to deviations reported to District in accordance with Rule 505. *Breakdown Conditions,* or Rule 1303.F *Emergency Provisions*.
[Ref: District Rule 1303, 40 CFR 70.6(a) (3)]

A16. Reporting Requirements/Compliance Certification. The permittee shall submit compliance certification reports to the USEPA and the Control Officer every six months. These reports shall be submitted on District forms and shall identify each applicable requirement/condition of the permit, the compliance status with each requirement/condition, the monitoring methods used to determine compliance, whether the compliance was continuous or intermittent, and include detailed information on the occurrence and correction of any deviations (excluding emergency upsets) from permit requirement. The reporting periods shall be each half of the calendar year, e.g., January through June for the first half of the year. These reports shall be submitted by September 1 and March 1, respectively, each year. Supporting monitoring data shall be submitted in accordance with the "Semi-Annual Compliance Verification Report" condition in section 9.C. The permittee shall include a written statement from the responsible official, which certifies the truth, accuracy, and completeness of the reports. [Ref: District Rules 1303 and 1302]

A17. Federally-enforceable Conditions. Each federally-enforceable condition in this permit shall be enforceable by the USEPA and members of the public. None of the conditions in the District-only enforceable section of this permit are federally enforceable or subject to the public/USEPA review [Ref: CAAA, § 502(b)(6), 40 CFR 70.6(b)]

A18. Recordkeeping Requirements. The permittee shall maintain records of required monitoring information that include the following:

(a) The date, place as defined in the permit, and time of sampling or measurements;

(b) The date(s) analyses were performed;

(c) The company or entity that performed the analyses;

(d) The analytical techniques or methods used;

(e) The results of such analyses; and

(f) The operating conditions as existing at the time of sampling or measurement;

The records, as well as all supporting information including calibration and maintenance records, shall be maintained for a minimum of five (5) years from date of initial entry by the permittee and shall be made available to the District upon request.

[Ref: District Rule 1303, 40 CFR 70.6(a)(3)(ii)(A)]

A19. Conditions for Permit Reopening. The permit shall be reopened and revised for cause under any of the following circumstances:

(a) Additional Requirements: If additional applicable requirements (e.g., NSPS or MACT) become applicable to the source which has an unexpired permit term of three (3) or more years, the permit shall be reopened. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. However, no such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended. All such re-openings shall be initiated only after a 30 day notice of intent to reopen the permit has been provided to the permittee, except that a shorter notice may be given in case of an emergency.

(b) Inaccurate Permit Provisions: If the District or the USEPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

(c) Applicable Requirement: If the District or the USEPA determines that the permit must be revised or revoked to assure compliance with any applicable requirement including a federally-enforceable requirement, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

Administrative procedures to reopen a permit shall follow the same procedures as apply to initial permit issuance. Re-openings shall affect only those parts of the permit for which causes to reopen exist. If the permit is reopened, and revised, it will be reissued with the expiration date that was listed in the permit before the re-opening. [Ref: 40 CFR 70.7(f), 40 CFR 70.6(a)]

9.B Generic Conditions

B.1 **Equipment Identification.** Identifying tag(s) or name plate(s) shall be displayed on the equipment to show manufacturer, model number, and serial number. The tag(s) or plate(s) shall be issued by the manufacturer or UCSB and shall be affixed to the equipment in a permanent and conspicuous position. [Ref: Rule 206]

B.2 **Equipment Maintenance.** The equipment listed in this permit shall be properly maintained and kept in good condition at all times. The equipment manufacturer's maintenance manual, maintenance procedures and/or maintenance checklists (if any) shall be kept on site. [Ref: Rule 206]

B.3 **Solvent Cleaning Operations (Rule 321).** The Permittee shall comply with the operating requirement, equipment requirements and emission control requirements for all solvent cleaning and solvent cleaning machines subject to this Rule. Compliance with this condition shall be based on facility inspections. [Ref: Rule 321]

B.4 **Architectural Coatings (Rule 323).** The Permittee shall comply with the emission standards listed in Section D of Rule 323. Compliance with this condition shall be based on facility inspections. [Ref: Rule 323]

B.5 **Adhesives and Sealants (Rule 353).** The permittee shall only use adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primers, that meet the ROC requirements of Rule 353, unless they otherwise qualify for exemption per Section B of the rule. [Ref: Rule 353]

9.C Requirements and Equipment Specific Conditions

C.1 **External Combustion Equipment.** The external combustion equipment listed in Attachment 10.2 are included in this emissions unit category.

The following conditions shall apply:

(a) Emission Limits: The following emission limits shall apply. Compliance shall be based on the operational, monitoring, recordkeeping, and reporting conditions of this permit:

(i) *Mass Emission Limits*. Mass emissions from the external combustion units subject to this permit shall not exceed the limits listed in Table 5.3 and Table 5.4. These limits are only federally-enforceable for the units which are subject to NSR, as indicated in Attachment 10.9. [Ref: Rule 802]

(ii) *Emission Standards.* Each external combustion unit shall not exceed the exhaust concentration limits specified in Attachment 10.2. [Ref: 360, or 361 as applicable]

(b) Operational Requirements: The equipment permitted herein is subject to the operational requirements listed in Attachment 10.2. The following additional requirements apply:

(i) *Heat Input Limits*. The hourly, daily and annual heat input limits to each unit shall not exceed the values listed in Table 5.1. These limits are based on the design rating of the unit and the annual heat input value as listed in the permit application. The fuel heat content listed in Table 5.1 shall be used for determining compliance. [Ref: Rule 802]

(ii) *Public Utility Natural Gas Fuel Sulfur Limit.* The total sulfur and hydrogen sulfide (H_2S) content (calculated as H_2S at standard conditions, 60°F and 14.7 psia) of the public utility natural gas fuel shall not exceed 80 ppmv and 4 ppmv respectively. Compliance with this condition shall be based on billing records or other data showing that the fuel gas is obtained from a public utility gas company. [Ref: Rule 802]

(iii) *Rule 360 Compliance*. Any boiler or hot water heater rated at or less than 2.000 MMBtu/hr and manufactured after October 17, 2003 shall be certified per the provisions of Rule 360. An ATC/PTO permit shall be obtained prior to installation of any grouping of Rule 360 applicable boilers or hot water heaters whose combined system design heat input rating exceeds 2.000 MMBtu/hr. [Ref: Rule 360]

(c) Monitoring: The equipment permitted herein is subject to the following monitoring requirements:

(i) *Fuel Usage Metering.* The volume of fuel gas used in these units shall be determined by one of the methods listed below. Attachment 10.2 identifies which method is approved for each unit. Except for changing to the Default Rating Method, written District approval is required to change to an alternate method.

1. Fuel Use Meter. The volume of fuel gas (scf) used shall be measured through the use of a dedicated District-approved fuel meter. The meter shall be temperature and pressure corrected. The fuel meter shall be accurate to within five percent (5%) of the full scale reading. The meter shall be calibrated according to manufacturer's specifications and the calibration records shall be made available to the District upon request.

2. Hour Meter. The volume of fuel gas (scf) used in the units shall be determined through the use of a dedicated District-approved hour meter or District-approved electronic management system that is capable of tracking and logging the unit's time on/off. Fuel usage shall be calculated based on the actual hours of operation (hours/year) times the heat input rating of the unit (Btu/hr) divided by the District-approved heating value of the fuel (Btu/scf).

3. Default Rating Method. The volume of fuel gas (scf) used shall be reported as permitted annual heat input limit for the unit (Btu/year) divided by the District-approved heating value of the fuel (Btu/scf).
[Ref: Rule 1303, 360, or 361 as applicable]

(ii) *Compliance Determinations*. The following compliance determinations shall apply:

1. Units Rated at 2.000 MMBtu/hr or Below. Units in this heat input range shall be tuned-up following the manufacturer's recommended tuning procedure or an alternative tuning procedure approved by the District. Attachment 10.2 defines the required tuning frequency.

2. Units Rated at 2.0 MMBtu/hr or Below – Subject to BACT. Any unit rated below 2.0 MMBtu/hr or below and subject to BACT requirements shall be tuned once every 12 months following the requirements of Section I of Rule 361 or by an alternative tuning procedure approved in-writing by the District.

3. Source Testing Units Rated greater than 2.000 MMBtu/hr. Source testing shall be performed at the frequency specified in Attachment 10.2 and conducted in accordance with the *Source Testing* permit condition. The District may, at its discretion, require UCSB to perform a source test on units subject to Rule 361.

4. Existing Units Rated Between 2.0 - 5.0 MMBtu/hr – Fired on Utility Natural Gas. As of June 20, 2019, any owner or operator of any existing unit fired exclusively on utility natural gas shall be tuned-up pursuant to the requirements of Section G of Rule 361. The District may, at its discretion, require any owner or operator of any unit subject to this rule to perform a source test per the test methods listed in Section H. An owner or operator may choose to comply with this section by performing District-approved source testing in lieu of tune-ups. Such source testing shall comply with the requirements of Section H.

5. Rule 361 Non-Operational Test Firing. No tune-up is required during a calendar year for any unit subject to Rule 361 that is not operated during that calendar year. This unit may be test fired to verify availability of the unit for its intended use but once test firing is completed it shall be shutdown. If test firing exceeds 24 hours per year, then tune-ups shall follow the requirements of Rule 361.I.1. [Ref: Rule 360, or 361 as applicable]

(d) Recordkeeping: The permittee shall maintain hardcopy records of the following:

(i) *Fuel Use.* The volume of fuel gas used each year (scf) as determined by the fuel use monitoring option as listed in Attachment 10.2. Units that use a fuel meter shall measure and record volume of gas used each month (scf) and record the number of days in each month the unit is operated. Units that track fuel use using the Default Rating Method are not required to record the fuel usage. Units subject to the Rule 361.D.2 low use exemption shall record fuel use on a monthly and annual basis for each fuel type. [Ref: Rule 1303, 360, or 361 as applicable]

(ii) *Tuning Records*. For units subject to Rule 361 tuning requirements, maintain copies of all *Rule 361 Tune-Up Reports* as specified in Step 12 of Procedure A and/or Step 6 of Procedure B of the tuning Attachment to Rule 361. For units subject to Rule 360, maintain documentation verifying the required tune-ups, including a complete copy of each tune-up report.
[Ref: Rule 1303, 360, or 361 as applicable]

(iii) *Non-Operational Test Firing*. A log that documents the date and number of hours that the unit was test fired in accordance with Rule 361.I.3. [Ref: Rule 361]

(iv) *Source Test Reports*. Source test reports for all District-required source tests. [Ref: 361 as applicable]

(v) *Fuel Use Meter Calibration Records*. Calibration records of District-approved fuel use meters. [Ref: Rule 1303, 361 as applicable]

(vi) *Maintenance Logs*. Maintenance logs for the boilers, emission control systems and fuel flow meters (as applicable). [Ref: Rule 1303, 361 as applicable]

(e) Reporting Requirements. On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all data required by permit condition 9.C.6 (Semi-Annual Compliance Verification Reports) of this permit. [Ref: Rule 1303]

C.2 **Stationary Emergency Standby Internal Combustion Engines.** The equipment listed in Table 5.5 are included in this emissions unit category. The following conditions shall apply:

(a) Emission Limits: The mass emissions from the equipment permitted herein shall not exceed the values listed in Table 5.7 and Table 5.8. Compliance shall be based on the operational, monitoring, recordkeeping and reporting conditions of this permit. These limits are only federally-enforceable for the units which are subject to NSR, as indicated in Attachment 10.9. [Ref: Rule 802]

(b) Operational Restrictions: The internal combustion engines are subject to the operational hour restrictions listed in Attachment 10.3. The following additional requirements listed below also apply. Emergency use operations, as defined in the ATCM[1], have no operational hour limitations. These limits are only federally-enforceable for the units which are subject to NSR, as indicated in Attachment 10.9. [Ref: Rule 802]

(i) Maintenance & Testing Use Limit: The stationary emergency standby diesel-fueled compression ignition (CI) engine(s) subject to this permit, except for firewater pump engines, shall limit maintenance and testing[2] operations to no more than the hours listed in Attachment 10.3.

(ii) Impending Rotating Outage Use: The stationary emergency standby diesel-fueled CI engine(s) subject to this permit may be operated in response to the notification of an impending rotating outage if all the conditions cited in the ATCM are met, as applicable.

(iii) Fuel and Fuel Additive Requirements: The permittee may only add fuel and/or fuel additives to the engine, or any fuel tank directly attached to the engine that comply with the ATCM, as applicable.

(iv) At-School and Near-School Provisions: The stationary emergency standby diesel-fueled engine at the Portola Dinning Commons (Device #388928) and the diesel-fueled fire water pump engine at the Santa Catalina Residence Hall (Device #114029) may not be operated for non-emergency use, including maintenance and testing, whenever there is a school sponsored activity between 7:30 a.m. and 3:30 p.m. on days when school is in session.

(v) Operation Near Schools: The diesel-fueled 113 hp portable emergency water pump engine (Device #388929) may not be operated within 1,000 feet of Isla Vista Elementary school at any time.

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[1] As used in the permit, "ATCM" means Section 93115, Title 17, California Code of Regulations. Airborne Toxic Control Measure for Stationary Compression Ignition (CI) Engines

[2] "maintenance and testing" is defined in of the ATCM and may also be found on the District webpage at https://www.ourair.org/wp-content/uploads/ES_MT_DICE_Definitions.pdf

[Ref: Rule 802]

(c) Monitoring: The equipment permitted herein is subject to the following monitoring requirements.

(i) Non-Resettable Hour Meter: Each stationary emergency standby diesel-fueled CI engine(s) subject to this permit shall have installed a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District has determined (in writing) that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [Ref: Rule 1303, 333, NSPS IIII, NSPS JJJJ as applicable]

(d) Recordkeeping. The permittee shall record and maintain the information listed below. Log entries shall be retained for a minimum of 36 months from the date of entry. Log entries made within 24 months of the most recent entry shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request. Log entries made from 25 to 36 months from most recent entry shall be made available to District staff within 5 working days from request. District Form ENF-92 (*Diesel-Fired Emergency Standby Engine Recordkeeping Form*) can be used for this requirement.

(i) Emergency use hours of operation. [Ref: Rule 1303, 205.C, 333, Rule 333, NSPS IIII, NESHAP JJJJ as applicable];

(ii) Maintenance and testing hours of operation. [Ref: Rule 1303, 205.C, 333, Rule 333, NSPS IIII, NESHAP JJJJ as applicable];

(iii) Hours of operation for emission testing to show compliance with the ATCM (if specifically allowed for under this permit). [Ref: Rule 1303, 205.C, 333, Rule 333, NSPS IIII, NESHAP JJJJ as applicable];

(iv) Hours of operation to comply with the requirements of NFPA 25/100 {if applicable}. [Ref: Rule 1303, 205.C, 333, NSPS IIII, NESHAP JJJJ as applicable];

(v) Hours of operation for all uses other than those specified in items (i) - (iv) above along with a description of what those hours were for. [Ref: Rule 1303, 205.C, 333, NSPS IIII, NESHAP JJJJ as applicable];

(vi) The owner or operator shall document fuel use through the retention of fuel purchase records that demonstrate that the only fuel purchased and added to an emergency standby engine or engines, or to any fuel tank directly attached to an emergency standby engine or engines, meets the requirements of the ATCM and, at a minimum, contain the following information for each individual fuel purchase transaction:

1. identification of the fuel purchased as either CARB Diesel, or an alternative diesel fuel that meets the requirements of the Verification Procedure, or an alternative fuel, or CARB Diesel fuel used with additives that meet the requirements of the Verification Procedure, or any combination of the above.

2. amount of fuel purchased.

3. date when the fuel was purchased.

4. signature of owner or operator or representative of owner or operator who received the fuel.

5. signature of fuel provider indicating fuel was delivered.

[Ref: Rule 1303, 205.C as applicable]

(e) Reporting Requirements. On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all data required by permit condition 9.C.6 (Semi-Annual Compliance Verification Reports) of this permit. [Ref: Rule 1303]

C.3 **Surface Coating**. The equipment listed in Table 5.16 are included in this emissions unit category. The following conditions shall apply:

(a) Emission Limits: The aggregate mass emissions from the equipment permitted herein shall not exceed the values listed in Table 5.9. Compliance shall be based on the operational, monitoring, recordkeeping and reporting conditions of this permit. Compliance with the pound per day (lb/day) emission limit shall be demonstrated by dividing the monthly emissions [determined from records kept of coating and solvent use per condition C.3(d) below *(Recordkeeping)* by **21.7** days per month. Compliance with the ton per year (TPY) emission limit shall be demonstrated by compiling the monthly ROC emission records for the year. [Ref: PTO 10056-R3, ATC 14803]

(b) Operational Restrictions: The equipment permitted herein is subject to the following operational restrictions listed below:

(i) Spray Booth Operation: Whenever surface coating materials are applied within the spray booth, the exhaust fan(s) shall be operating, effective overspray filters and baffle plates (if any) shall be in place and operational. [Ref: PTO 10056-R3, ATC 14803]

(ii) Spray Gun Cleaning: Cleaning of any spray gun after motor vehicle & mobile equipment coating use shall be conducted within an enclosed gun washer. [Ref: PTO 10056-R3, ATC 14803, Rule 321]

(iii) Prohibition: The use of any substance containing hexavalent chromium (Cr^{+6}) or cadmium (Cd) is prohibited. [Ref: PTO 10056-R3, ATC 14803]

(iv) Storage of ROC-Containing Materials: All new and used materials containing reactive organic compounds (ROCs) shall be stored in closed containers equipped with a tight-fitting seal. Containers used for storing ROC-containing materials shall remain closed except during extraction or introduction of materials for use or storage. [Ref: PTO 10056-R3, ATC 14803]

(c) Monitoring. The equipment permitted herein is subject to the following monitoring requirements:

(i) Spray booth filters shall be inspected prior to use of the booth and replaced when necessary to ensure control of particulate emissions and overspray. [Ref: PTO 10056-R3, ATC 14803]

(ii) During spray booth operation the operator shall verify that the booth manometer (if any) is functioning and indicating a measurable pressure drop. [Ref: PTO 10056-R3, ATC 14803]

(d) Recordkeeping. The permittee shall record and maintain the following information. This data shall be maintained for a minimum of three (3) years from the date of each entry and made available to the District upon request:

(i) For surface coating of metal parts & products activities: records required by District Rule 330.H. [Ref: PTO 10056-R3, ATC 14803, Rule 330, Rule 1303]]

(ii) For wood and wood product surface coatings: records required by District Rule 351.I. [Ref: PTO 10056-R3, ATC 14803, Rule 351, 1303]

(iii) Any other records required by applicable District rules. [Ref: PTO 10056-R3, ATC 14803, Rule 1303]

(e) Reporting Requirements. On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all data required by permit condition 9.C.6 (Semi-Annual Compliance Verification Reports) of this permit. [Ref: Rule 1303]

C.4 **Gasoline Dispensing Facility**. The equipment listed in Table 5.17 is included in this emissions unit category. The following conditions shall apply:

(a) Emission Limits: The mass emissions from the equipment permitted herein shall not exceed the values listed in Attachment 10.7. Compliance shall be based on the operational, monitoring, recordkeeping, and reporting conditions of this permit. Compliance with the pound per day (lb/day) emission limit shall be demonstrated by the permittee by dividing annual emissions (determined from the recordkeeping conditions) by **365** days per year. [Ref: PTO 9406, AP 9844, PTO 14414, ATC 15539]

(b) Operational Restrictions: The equipment permitted herein is subject to the following operational restrictions listed below:

(i) The throughput of gasoline shall not exceed values listed Table 5.17

(ii) The equipment shall be maintained "Leak Free". Leak free is defined as having a leak rate of three (3) drops per minute or less of a liquid containing reactive organic compounds.

(iii) Gauging and/or sampling devices on the tanks shall be equipped with vapor tight covers that shall be closed at all times except during gauging or sampling.

(iv) Any defective component of the vapor recovery system (VRS) shall be removed from service until it is repaired, replaced, or adjusted as necessary to ensure compliance.

(v) Equipment operation shall be conducted in compliance with all data, specifications and assumptions included with the applications and as documented in the District's project file. The VRS system(s) shall be installed, operated and maintained in accordance with the applicable California Air Resources Board ("CARB") Executive Orders.

[Ref: PTO 9406, AP 9844, PTO 14414, ATC 15539, Rule 316]

(c) Monitoring. The equipment permitted herein is subject to the following monitoring requirements:

(i) A non-resettable fuel meter shall be used to measure the amount of fuel dispensed from the storage tank. This meter shall be operational at all times and shall be maintained and calibrated according to manufacturer's specifications.

(ii) *VRS Maintenance and Compliance Testing - Routine/Ongoing Operations*. The permittee shall routinely conduct and successfully pass the VRS system tests as outlined in Attachment 10.4, as well as, any VRS specific tests required in the applicable Executive Orders. These tests shall be conducted pursuant to the procedures outlined in Attachment 10.4 and shall be performed pursuant to test protocols approved by the ARB. In order for the District to witness testing, the permittee shall notify the District of the planned testing date not less than five (5)

business days prior to the testing. All data for each test (including any data showing initial test failures) shall be sent to the District at 260 North San Antonio Drive, Suite A, Santa Barbara, CA, 93110 (Attn: *Engineering & Compliance Division*) within 30 days of successful test completion, using District or ARB approved reporting forms.

[Ref: PTO 9406, AP 9844, PTO 14414, ATC 15539]

(d) Recordkeeping. The permittee shall record and maintain the following information. This data shall be maintained for a minimum of three (3) years from the date of each entry and made available to the District upon request:

(i) The volume (gallons) of gasoline dispensed from the AST per month and per year;

(ii) *Inspection, Maintenance, Repair and Testing Records*. The permittee shall keep clear and legible records of all inspections, maintenance, repairs, and testing of any of the gasoline dispensing VRS components at this facility. This includes, but is not limited to, the activities for normal operation and maintenance per the manufacturer, ISD control panel alarm tracking (if applicable), performance and/or compliance testing according to ARB protocols, and those following damage to dispensing equipment from a "driveoff" or other kind of damage. The permittee shall ensure that all records obtained from third party contractors are a legible form. The records listed in Attachment 10.5 shall be maintained on site by the permittee for at least three years and shall be made available for District inspection upon request.

(e) Reporting Requirements. On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all data required by permit condition 9.C.6 (Semi-Annual Compliance Verification Reports) of this permit. [Ref: Rule 1303]

C.5 **Source Testing.** The following source testing provisions shall:

(a) Source testing shall be performed upon written request from the District. The permittee shall conduct source testing of air emissions and process parameters listed in Table 4.3 of this permit. More frequent source testing may be required if the equipment does not comply with permitted limitations or if other compliance problems, as determined by the District, occur.

(b) The permittee shall submit a written source test plan to the District for approval at least thirty (30) days prior to initiation of each source test. The source test plan shall be prepared consistent with the District's Source Test Procedures Manual (revised May 1990 and any subsequent revisions). The permittee shall obtain written District approval of the source test plan prior to commencement of source testing. The District shall be notified at least ten (10) calendar days prior to the start of source testing activity to arrange for a mutually agreeable source test date when District personnel may observe the test.

(c) Source test results shall be submitted to the District within forty-five (45) calendar days following the date of source test completion and shall be consistent with the requirements approved within the source test plan. Source test results shall document the permittee' s compliance status with BACT requirements, mass emission rates in Table 5.3 and applicable permit conditions, rules and NSPS (if applicable). All District costs associated with the review and approval of all plans and reports and the witnessing of tests shall be paid by the permittee as provided for by District Rule 210.

(d) A source test for an item of equipment shall be performed on the scheduled day of testing (the test day mutually agreed to) unless circumstances beyond the control of the operator prevent completion of the test on the scheduled day. Such circumstances include mechanical malfunction of the equipment to be tested, malfunction of the source test equipment, delays in source test contractor arrival and/or set-up, or unsafe conditions on site. Except in cases of an emergency, the operator shall seek and obtain District approval before deferring or discontinuing a scheduled test, or performing maintenance on the equipment item on the scheduled test day. If the test cannot be completed on the scheduled day, then the test shall be rescheduled for another time with prior authorization by the District. Once the sample probe has been inserted into the exhaust stream of the equipment unit to be tested (or extraction of the sample has begun), the test shall proceed in accordance with the approved source test plan. In no case shall a test run be aborted except in the case of an emergency or unless approval is first obtained from the District. Failing to perform the source test of an equipment item on the scheduled test day without a valid reason and without District's authorization shall constitute a violation of this permit. If a test is postponed due to an emergency, written documentation of the emergency event shall be submitted to the District by the close of the business day following the scheduled test day.

(e) The timelines in (a), (b), and (c) above may be extended for good cause provided a written request is submitted to the District at least three (3) days in advance of the deadline, and approval for the extension is granted by the District.

C.6 **Semi-Annual Compliance Verification Reports**. Twice a year, UCSB shall submit a compliance verification report to the District. Each report shall be used to verify compliance with the prior two calendar quarters. The first report shall cover calendar quarters 1 and 2 (January through June) and shall be submitted no later than September 1st. The second report shall cover calendar quarters 3 and 4 (July through December) and shall be submitted no later than March 1st Each report shall contain information necessary to verify compliance with the emission limits and other requirements of this permit (if applicable for that quarter). These reports shall be submitted by hardcopy and electronic pdf copy and in a format approved by the District. All logs and other basic source data not included in the report shall be available to the District upon request. The second report shall also include an annual report for the prior four quarters. Pursuant to Rule 212, a completed District Annual Emissions Inventory questionnaire shall be included in the annual report or submitted electronically via the District Webpage. The report shall include the following information:

External Combustion Equipment:

(i) *Fuel Use Data*. The fuel use data required in the Recordkeeping Condition above. Units that track fuel use using the Default Rating Method are not required to submit an annual report for fuel use.

(ii) *Tuning Records*. Tuning Records as required in the Recordkeeping Condition above.

(iii) *Rule 361 Test Firing Records*. A copy of the Rule 361 Non-Operational Test Firing log.

(iv) *Source Test Report Results*. Results of all source test reports.

[Ref: Rule 1303, 360, or 361 as applicable]

Stationary Emergency Standby Internal Combustion Engines:

(v) emergency use hours of operation. [Ref: Rule 1303, 205.C, 333, Rule 333, NSPS IIII, NESHAP JJJJ as applicable];

(vi) maintenance and testing hours of operation. [Ref: Rule 1303, 205.C, 333, Rule 333, NSPS IIII, NESHAP JJJJ as applicable];

(vii) hours of operation for emission testing to show compliance with the ATCM {if specifically allowed for under this permit}. [Ref: Rule 1303, 205.C, 333, Rule 333, NSPS IIII, NESHAP JJJJ as applicable];

(viii) hours of operation to comply with the requirements of NFPA 25/100 {if applicable}. [Ref: Rule 1303, 205.C, 333, NSPS IIII, NESHAP JJJJ as applicable];

(ix) hours of operation for all uses other than those specified in items (a) - (c) above along with a description of what those hours were for. [Ref: Rule 1303, 205.C, 333, NSPS IIII, NESHAP JJJJ as applicable];

(x) The owner or operator shall document fuel use through the retention of fuel purchase records that demonstrate that the only fuel purchased and added to an emergency standby engine or engines, or to any fuel tank directly attached to an emergency standby engine or engines, meets the requirements of the ATCM and, at a minimum, contain the following information for each individual fuel purchase transaction:

1. identification of the fuel purchased as either CARB Diesel, or an alternative diesel fuel that meets the requirements of the Verification Procedure, or an alternative fuel, or CARB Diesel fuel used with additives that meet the requirements of the Verification Procedure, or any combination of the above.

2. amount of fuel purchased

3. date when the fuel was purchased.

4. signature of owner or operator or representative of owner or operator who received the fuel.

5. signature of fuel provider indicating fuel was delivered.

[Ref: Rule 1303, 205.C as applicable]

Solvent Coating Operations:

(xi) For surface coating of metal parts & products activities: records required by District Rule 330.H. [Ref: PTO 10056-R3, Rule 330, Rule 1303]]

(xii) For wood and wood product surface coatings: records required by District Rule 351.I. [Ref: PTO 10056-R3, Rule 351, 1303]

(xiii) Any other records required by applicable District rules.
[Ref: PTO 10056-R3, Rule 1303]

(xiv) The report shall consist of a completed form ENF-56 (rev 12/2009 or later), or other District-approved form containing the same data. *This report shall include a copy of the "ROC Monthly Purchase Summary" data sheets provided by the distributor to the permittee for each month of the calendar year.*

[Ref: PTO 10056-R3, Rule 1303]

Gasoline Dispensing Facility:

(xv) The volume (gallons) of gasoline dispensed from the AST for each month and for the year.

(xvi) Results of the annual Static Leak Decay Test.

C.7 **Best Available Control Technology (BACT)**. The permittee shall apply emission control technology and plant design measures the represent BACT to the operation of the equipment/facilities described in Section 4.7. Tables 4.1 and 4.2 and the *Emissions, Operational Restrictions, Monitoring, Recordkeeping* and *Reporting* conditions of this permit define the specific control technology and performance standard emission limits for BACT. The BACT shall be in place, and shall be operational at all times, for the life of the project. BACT related monitoring, recordkeeping and reporting requirements are defined in those specific permit conditions. [Ref: Rule 802]

C.8 **Documents Incorporated by Reference**. The documents listed below, including any District-approved updates thereof, are incorporated herein and shall have the full force and effect of a permit condition. These documents shall be implemented for the life of the project:

- *Fuel Use Monitoring Plan (FUMP)* (August 4, 2015 any subsequent District-approved updates). [Ref: Rule 1303]

- *Emergency Episode Plan* (August 21, 2015 and any subsequent District-approved updates). [Ref: Rule 603]

- *Rule 361 Compliance Plan* (June 20, 2019 and any subsequent District-approved updates). [Ref: Rule 361]

9.D District-Only Conditions

D.1 **Stationary Emergency Standby Internal Combustion Engines.** The equipment listed in Attachment 10.3 are included in this emissions unit category. The following conditions shall apply:

(a) Emission Limits: N/A

(b) Operational Restrictions:

(i) Firewater Pumps: The stationary emergency standby diesel-fueled CI engines subject to this permit that are operated as firewater pumps shall not operate more than the number of hours necessary to comply with the testing requirements of the current National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems".

D.2 **Notification of Loss of Exemption.** Owners or operators of in-use stationary diesel-fueled CI engines, who are subject to an exemption specified in the ATCM from all or part of the requirements of the ATCM, shall notify the District immediately after they become aware that the exemption no longer applies and shall demonstrate compliance within 180 days after notifying the District.

D.3 **Enrollment in a DRP/ISC - January 1, 2005.** Any stationary diesel CI engine rated over 50 bhp that enrolls for the first time in a Demand Response Program/Interruptible Service Contract as defined in the ATCM) on or after January 1, 2005, shall first obtain an District Authority to Construct permit to ensure compliance with the emission control requirements and hour limitations governing ISC engines.

D.4 **Notification of Non-Compliance.** Owners or operators who have determined that they are operating their stationary diesel-fueled engine(s) in violation of the requirements specified in the ATCM shall notify the District immediately upon detection of the violation and shall be subject to District enforcement action.

D.5 **Temporary Engine Replacements - DICE ATCM.** Any reciprocating internal combustion engine subject to this permit and the stationary diesel ATCM may be temporarily replaced only if the requirements (a – h) listed herein are satisfied.

(a) The permitted engine that is being temporarily replaced is in need of routine repair or maintenance.

(b) The permitted engine does not have a cracked block, unless the block will be replaced under manufacturer's warranty.

(c) Replacement parts are available for the permitted engine.

(d) The permitted engine is returned to its original service within 180 days of installation of the temporary engine.

(e) The temporary replacement engine has the same or lower manufacturer rated horsepower and same or lower potential to emit of each pollutant as the permitted engine. At the written request of the permittee, the District may approve a replacement engine with a larger rated horsepower if the proposed temporary engine has manufacturer guaranteed emissions (for a brand new engine) or source test data (for a previously used engine) less than or equal to the permitted engine.

(f) The temporary replacement engine shall comply with all rules and permit requirements that apply to the permitted engine.

(g) For each permitted engine to be temporarily replaced, the permittee shall submit a completed *Temporary IC Engine Replacement Notification* form (Form ENF-94) within 14 days of the temporary engine being installed. This form may be sent hardcopy, or can be e-mailed (e-mail: engr@sbcapcd.org) to the District (Attn: Engineering Supervisor).

(h) Within 14 days of returning the original permitted engine to service, the permittee shall submit a completed *Temporary IC Engine Replacement Report* form (Form ENF-95). This form may be sent hardcopy, or can be e-mailed (e-mail: engr@sbcapcd.org) to the District (Attn: Engineering Supervisor).

Any engine in temporary replacement service shall be immediately shut down if the District determines that the requirements of this condition have not been met. If the requirements of this condition are not met, the permittee must obtain an ATC before installing or operating a temporary replacement engine.

D.6 **Permanent Engine Replacements.** The permittee may install a new engine in place of an engine permitted herein without first obtaining an ATC only if the requirements (a – g) listed herein are satisfied.

(a) The permitted stationary diesel-fueled engine is an E/S engine, a firewater pump engine or an engine used for an essential public service (as defined by the District).

(b) The permitted engine breaks down, cannot be repaired, and needs to be replaced by a new permanent engine.

(c) The facility provides "good cause" (in writing) within 7 days of installation of the new permanent engine (or temporary engine), for the need to install a new permanent engine before an ATC can be obtained for a new engine.

(d) The new permanent engine must comply with the requirements of the ATCM for new engines. A temporary replacement engine may be used while the new permanent engine is being procured only if it meets the requirements (e - h) of the *Temporary Engine Replacements - DICE ATCM* permit condition D.5

(e) An Authority to Construct application for the new permanent engine is submitted to the District within 15 days of the existing engine being replaced. (these timelines include the use of a temporary engine). Any temporary engine installed may operate up to 225 days from the installation date, the initiation of SCDP for the new permanent engine, or the first day the new permanent engine is operated under an IPAP agreement, whichever comes first.

(f) Notwithstanding the application timeline in condition D.6(e), projects classified as formal capital projects under the California Public Contract Code shall submit an Authority to Construct application for the new permanent engine within 180 days of the existing engine being replaced by a temporary engine. The temporary engine may operate up to 365 days from the installation date, the initiation of SCDP for the new permanent engine, or the first day the new permanent engine is operated under an IPAP agreement, whichever comes first. In order to qualify for the extended timeline, the facility shall provide documentation that the project is classified as a formal capital project under the California Public Contract Code. The District may extend these timelines upon written request.

(g) For each new permanent engine installed pursuant to this condition, the permittee shall submit a completed *Permanent IC Engine Replacement Notification* form (Form ENF-96) within 14 days of the new engine being installed. This form may be sent hardcopy, or can be e-mailed (e-mail: engr@sbcapcd.org) to the District (Attn: Engineering Supervisor).

Any engine installed pursuant to this condition shall be immediately shut down if the District determines that the requirements of this condition have not been met.

D.7 **Nuisance (Rule 303).** Except as otherwise provided in Section 41705 of the California H&SC, no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

D.8 **Circumvention (Rule 301).** A person shall not build, erect, install, or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Division 26 (Air Resources) of the Health and Safety Code of the State of California or of these Rules and Regulations. This Rule shall not apply to cases in which the only violation involved is of Section 41700 of the Health and Safety Code of the State of California, or of District Rule 303.

D.9 **Visible Emissions (Rule 302).** The permittee shall not discharge into the atmosphere from any single source of emission any air contaminants for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection B.5.(a) above.

For all combustion sources listed in Section 9.C, UCSB shall be in compliance with the requirements of this Rule in accordance with the monitoring and compliance recordkeeping procedures in Section 9.C.

D.10 **Temporary External Combustion Unit Replacement.** Permitted units may be replaced temporarily only if the requirements listed below are satisfied:

(a) The permitted unit is in need of routine repair or maintenance.

(b) The permitted unit that is undergoing routine repair or maintenance is returned to its original service within 180 days of installation of the temporary unit.

(c) The existing units must meet the emission limits established in Rule 361.

(d) The fuel usage for the existing units must be monitored using District approved, pressure and temperature correcting fuel meters.

(e) The temporary replacement unit has the same or lower manufacturer MMBtu rating and same or lower potential to emit of each pollutant as the permitted unit that is being temporarily replaced. At the written request of the permittee, the District may approve a replacement unit with a larger rated MMBtu rating than the permitted unit if the proposed temporary unit has manufacturer guaranteed emissions (for a brand new unit) or source test data (for a previously used unit) less than or equal to the permitted unit.

(f) The temporary replacement unit shall comply with all rules and permit requirements that apply to the permitted unit that is undergoing routine repair or maintenance.

(g) For each permitted unit to be temporarily replaced, the permittee shall notify the District within 14-days of the temporary unit being installed. (Attn: Engineering Supervisor).

Any unit in temporary replacement service shall be immediately shut down if the District determines that the requirements of this condition have not been met. [Ref: Rule 206]

D.11 **Emergency External Combustion Unit Replacements.** Any external combustion unit subject to this permit may be replaced without an ATC permit only if all the requirements listed below are satisfied:

(a) The unit breaks down, cannot be repaired, and needs to be replaced by a new unit.

(b) Any boiler or hot water heater rated at or less than 2.000 MMBtu/hr shall be certified per the provisions of Rule 360.

(c) Any boiler or water heater rated greater than 2.000 MMBtu/hr and less than 5.000 MMBtu/hr shall be guaranteed by the manufacturer to meet the emission limits of Rule 361.

(d) Any boiler or water heater rated greater than or equal to 5.000 MMBtu/hr shall be guaranteed by the manufacturer to meet the emission limits of Rule 342.

(e) The facility provides "good cause" (in writing) within 7 days of installation of a new permanent unit or temporary unit for the immediate need to install a permanent or temporary replacement unit before an ATC permit can be obtained for a new unit. The new unit must comply with the operational requirements and emission limits for new units. If a new unit is not immediately available, a temporary unit may be used while the new replacement unit is being procured. During this time, the temporary replacement unit must meet the same operational requirements and emission limits as the new unit.

(f) The "good cause" notification shall include the following:

(i) A copy of the emission certification or guarantee listed above.
(ii) A calculation of the daily and annual potential to emit of the new unit, based on the certified or guaranteed emission factors, and operation 24 hours per day, 8,760 hours per year at the unit's rated heat input.
(iii) A demonstration that the potential to emit of the unit is below the BACT threshold for all pollutants.
(iv) A demonstration that the sum of the potential to emit of the unit plus the current stationary source potential to emit is below the offset threshold for all pollutants or the replacement unit qualifies for the Rule 802.B.2 BACT offset exemption.

(g) An Authority to Construct application for the new permanent unit is submitted to the District within 15 days of the existing unit being replaced. (these timelines include the use of a temporary unit). Any temporary unit installed may operate up to 225 days from the installation date, the initiation of SCDP for the new permanent unit, or the first day the new permanent unit is operated under an IPAP agreement, whichever comes first.

(h) Notwithstanding the application timeline in condition D.11(g), projects classified as formal capital projects under the California Public Contract Code shall submit an Authority to Construct application for the new permanent unit within 180 days of the existing unit being replaced by a temporary unit. The temporary unit may operate up to 365 days from the installation date, the initiation of SCDP for the new permanent unit, or the first day the new permanent unit is operated under an IPAP agreement, whichever comes first. In order to qualify for the extended timeline, the facility shall provide documentation that the project is classified as a formal capital project under the California Public Contract Code. The District may extend these timelines upon written request.

(i) The facility shall obtain written District approval prior to installing the new unit.

For the purpose of this Condition, an external combustion unit replacement includes replacement of burner assemblies. The District's written approval in (i) above shall act as a temporary ATC pursuant to District Rule 201 and Regulation VIII.

Any external combustion unit installed pursuant to this permit condition shall be immediately shut down if the District determines that the requirements of this condition have not been met. Such notification shall be in writing from the District.

AIR POLLUTION CONTROL OFFICER

DATE

Notes: Reevaluation Due Date: December 2026
This permit supersedes PT-70 13725-R2 and permits listed in Attachment 10.9

Attachments:
10.1 Permitted Equipment
10.2 External Combustion Equipment Operational Requirements
10.3 Internal Combustion Equipment Operational Requirements
10.4 Vapor Recovery System Testing Requirements
10.5 Vapor Recovery Facility Repair Log and Testing Records
10.6 Health Risk Assessment Documentation
10.7 Gasoline Tank Emissions
10.8 Coating Operation Emissions
10.9 Permits Incorporated into PT-70 13725 R3
10.10 Maps of UCSB
10.11 Fee Statement
10.12 Permit Exempt Equipment
10.13 Draft Comments

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Attachment 10.1. Permitted Equipment

A PERMITTED EQUIPMENT

1 Building 205, Seawater Filter Building, G-5

1.1 E/S Diesel Engine

Device ID #	114058	*Maximum Rated BHP*	299.00
Device Name	E/S Diesel Engine	*Serial Number*	5YF04089
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Caterpillar	*Operator ID*	
Model Year	2000	*Fuel Type*	CARB Diesel - ULSD
Model	3208		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Filter Building, Building 205 ::		
Device Description	Emergency engine provides power for the Filter Building.		

2 Building 221, Student Resource Building (SRB), E-1

2.1 Boiler 1

Device ID #	**114076**	***Device Name***	**Boiler 1**
Rated Heat Input	2.070 MMBtu/Hour	*Operator ID*	B1
		Serial Number	0505236656
Manufacturer	Raypak	*Rule 361 Status*	Existing
Model	H9-2072A		
Location Note	Added note: E-1, Student Resource, Building 221 :: building 221		
Emission Control Basis	Uncontrolled		
Device Description	natural draft on/off mode		

2.2 Diesel Emergency Standby Generator Engine

Device ID #	114030	*Maximum Rated BHP*	470.00
Device Name	Diesel Emergency Standby Generator Engine	*Serial Number*	35121421
Engine Use	Electrical Power	*EPA Engine Family Name*	4CEXL0661AAD
Manufacturer	Cummins	*Operator ID*	
Model Year	2005	*Fuel Type*	CARB Diesel - ULSD
Model	QSM11-G2		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note	Added note: E-1, Student Resource, Building 221 ::		
Device Description	250 kW emergency standby generator located at the Student Resources Building. Used for egress lighting. Executive Order: U-R-002-0214-2. Tier II Standards.		

3 Building 223, Theater and Dance

3.1 Benchtop Spray Booth

Device ID #	**390201**	***Device Name***	**Benchtop Spray Booth**
Rated Heat Input		*Physical Size*	0.33 Horsepower (Electric Motor)
Manufacturer	Paasche	*Operator ID*	
Model	FABSF-4-T3	*Serial Number*	
Location Note	Building 223 - Theater and Dance West Building		
Device Description	4' Shelf Type Spray Booth Three-sided. Working Dimensions: 4'W x 3'D x 4'6"H 18 inch Fan with Sparkless Aluminum Blade Max flow 2,420 CFM @ 1/4 SP		

4 Building 225, Engineering Science (ESB), D-5

4.1 Boiler #1

Device ID #	**388327**	***Device Name***	**Boiler #1**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B1
		Serial Number	62512
Manufacturer	Parker		
Model	G2304RL	*Stacked Unit?*	Yes
Location Note			
Emission Control Basis	R360		
Device Description	Natural Draft, Full Modulation, Low NOx Burner		
	Replaced device #114072		

4.2 Boiler #2

Device ID #	**388328**	***Device Name***	**Boiler #2**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B2
		Serial Number	62493
Manufacturer	Parker		
Model	G2304RL	*Stacked Unit?*	Yes
Location Note			
Emission Control Basis	R360		
Device Description	Natural Draft, Full Modulation, Low NOx Burner		
	Replaced Device #114073		

4.3 Boiler #3

Device ID #	**388329**	***Device Name***	**Boiler #3**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B3
		Serial Number	62492
Manufacturer	Parker		
Model	G2304RL	*Stacked Unit?*	Yes
Location Note			
Emission Control Basis	R360		
Device Description	Natural Draft, Full Modulation, Low NOx Burner Replaced Device #114074 and 114075		

4.4 E/S Diesel Engine

Device ID #	114057	*Maximum Rated BHP*	1490.00
Device Name	E/S Diesel Engine	*Serial Number*	37205580
Engine Use	Electrical Power	*EPA Engine Family Name*	2CEXL030.ABA
Manufacturer	Cummins	*Operator ID*	
Model Year	2002	*Fuel Type*	CARB Diesel - ULSD
Model	QST30-G5-NR1		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: D-5, Engineering Science, Building 225 ::		
Device Description	Emergency engine provides power for the Engineering Science Building.		

5 Building 226: Henley Hall

5.1 E/S Diesel Engine

Device ID #	393553	*Maximum Rated BHP*	281.00
Device Name	E/S Diesel Engine	*Serial Number*	45502152
Engine Use	Electrical Power	*EPA Engine Family Name*	KPXL07.0PW1
Manufacturer	Caterpillar	*Operator ID*	
Model Year	2019	*Fuel Type*	CARB Diesel - ULSD
Model	C7.1		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note	Henley Hall		
Device Description	US EPA Tier 3 certified engine. Turbocharged and aftercooled.		

6 Building 235, Life Sciences (LSB), E-4

6.1 Hot Water Boiler

Device ID #	**394764**	***Device Name***	**Hot Water Boiler**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B1
		Serial Number	2026 118122758
Manufacturer	Lochinvar		
Model	FBN2001	*Stacked Unit?*	Yes
Location Note	Building 235 - Life Sciences Building		
Emission Control Basis	R360		
Device Description	Low-NOx burner, forced draft, full modulation. Replaces DID# 114077. Operates in a stacked configuration with DID# 393445. Equipped with a dedicated pressure and temperature corrected Roots 3M175 rotary fuel meter.		

6.2 Hot-Water Boiler #2

Device ID #	**393445**	***Device Name***	**Hot-Water Boiler #2**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B2
		Serial Number	63999
Manufacturer	Parker Boilers		
Model	204L-G2304R(L)	*Stacked Unit?*	Yes
Location Note	Building 235 - Life Sciences		
Emission Control Basis	R360		
Device Description	Forced draft hot water boiler, equipped with a Low-NOx burner. Equipped with a dedicated Dresser Roots 3M175 Rotary fuel meter. The unit operates in a stacked configuration with an existing low-use Rule 361 unit (DID# 114077).		

6.3 E/S Diesel Engine

Device ID #	114056	*Maximum Rated BHP*	768.00
Device Name	E/S Diesel Engine	*Serial Number*	2160050327
Engine Use	Electrical Power	*EPA Engine Family Name*	4VPXL160ACB
Manufacturer	Volvo	*Operator ID*	
Model Year	2004	*Fuel Type*	CARB Diesel - ULSD
Model	TAD1631GE		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: E-4, Life Sciences, Building 235 ::		
Device Description	Emergency engine provides power for the Life Science Building.		

7 Building 250, Mesa Parking Structure, C-3

7.1 E/S Diesel Engine

Device ID #	114055	*Maximum Rated BHP*	152.00
Device Name	E/S Diesel Engine	*Serial Number*	CD6059T355666
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	John Deere	*Operator ID*	
Model Year	1998	*Fuel Type*	CARB Diesel - ULSD
Model	6059TF002		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: C-3, Mesa Parking Building, Building 250 ::		
Device Description	Emergency engine provides power for the Mesa Parking Structure.		

8 Building 266, Cal. Nanosystems Institute (CNSI), D-6

8.1 Boiler B1

Device ID #	**393026**	***Device Name***	**Boiler B1**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B1
		Serial Number	63501
Manufacturer	Parker Boilers		
Model	G-2304RL	*Stacked Unit?*	Yes
Location Note	Building 266		
Emission Control Basis	R360		
Device Description	Hot Water Boiler equipped with a Low-NOx burner and a temperature and pressure corrected fuel meter		

8.2 Boiler B2

Device ID #	**393027**	***Device Name***	**Boiler B2**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B2
		Serial Number	63500
Manufacturer	Parker Boilers		
Model	G-2304RL	*Stacked Unit?*	No
Location Note	Building 266		
Emission Control Basis	R360		
Device Description	Hot Water Boiler equipped with a Low-NOx burner and a temperature and pressure corrected fuel meter		

8.3 Boiler B-3

Device ID #	**114063**	***Device Name***	**Boiler B-3**
Rated Heat Input	3.250 MMBtu/Hour	*Operator ID*	B-3
		Serial Number	29491
Manufacturer	Rite Engineering	*Rule 361 Status*	Existing
Model	325WG		
Location Note	Added note: D-6, Elings Hall, Building 266 :: B-266 CNSI on roof		
Emission Control Basis	Uncontrolled		
Device Description	Hot water boiler. PowerFlame C3-G-20 standard 85 ppmv NOx burner. Grouped with two other similar boilers at Building 266 CNSI		

8.4 E/S Diesel Engine

Device ID #	114054	*Maximum Rated BHP*	2172.00
Device Name	E/S Diesel Engine	*Serial Number*	1GZ01964
Engine Use	Electrical Power	*EPA Engine Family Name*	4CPXL586ERK
Manufacturer	Caterpillar	*Operator ID*	
Model Year	2004	*Fuel Type*	CARB Diesel - ULSD
Model	3512		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: D-6, Elings Hall, Building 266 ::		
Device Description	Emergency engine provides power for the CNSI Building.		

9 Building 276, Social Sciences and Media Studies (SSMS), D-3

9.1 Diesel Engine - ESSB

Device ID #	114071	*Maximum Rated BHP*	398.00
Device Name	Diesel Engine - ESSB	*Serial Number*	S9L01996
Engine Use	Electrical Power	*EPA Engine Family Name*	7CPXL08.8ESK
Manufacturer	Caterpillar	*Operator ID*	
Model Year	2007	*Fuel Type*	CARB Diesel - ULSD
Model	C9		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note	Added note: D-3, Social Sciences and Media Studies, Building 276 :: UCSB - Education and Social Sciences Building #276		
Device Description	test		

9.2 Heater 1

Device ID #	**114128**	***Device Name***	**Heater 1**
Rated Heat Input	2.270 MMBtu/Hour	*Operator ID*	B1
		Serial Number	58859
Manufacturer	Parker	*Rule 361 Status*	
Model	WH2270L		
Location Note	Added note: D-3, Social Sciences and Media Studies, Building 276 :: building 276		
Emission Control Basis	R361		
Device Description	natural draft on/off mode PUC Natural Gas		

9.3 Heater 2

Device ID #	**114129**	***Device Name***	**Heater 2**
Rated Heat Input	2.270 MMBtu/Hour	*Operator ID*	B2
		Serial Number	58858
Manufacturer	Parker	*Rule 361 Status*	
Model	WH2270L		
Location Note	Added note: D-3, Social Sciences and Media Studies, Building 276 :: building 276		
Emission Control Basis	R361		
Device Description	natural draft on/off mode PUC Natural Gas		

10 Building 336, Mesa Road Fuel Station

10.1 Aboveground Storage Tank Bldg. 336

Device ID #	**387554**	***Device Name***	**Aboveground Storage Tank Bldg. 336**
Rated Heat Input		*Physical Size*	6000.00 Gallons
Manufacturer	Convault	*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Tank from original PTO 9406, transferred to PTO 14414. Phase 1 executive order: VR-401-C Phase 2 executive order: G-70-116-F Standing Loss Control Executive Order: VR-301-D		

10.2 Fuel Dispensers (2 Nozzle)

Device ID #	**394768**	*Device Name*	**Fuel Dispensers (2 Nozzle)**
Rated Heat Input		*Physical Size*	6000.00 Gallons
Manufacturer	Gasboy	*Operator ID*	
Model	9853KX DFZ	*Serial Number*	AT00008558
Location Note	Building 336 at UCSB.		
Device Description	two (2) Gasboy 9853KX DFZ dispensers, each equipped with one nozzle (two nozzles total) Both Serial No are AT00008558 and AT00008559.		

11 Building 479, Old Gym, D-3

11.1 Water Heater 1

Device ID #	**114112**	*Device Name*	**Water Heater 1**
Rated Heat Input	3.000 MMBtu/Hour	*Operator ID*	B1
		Serial Number	51924
Manufacturer	Parker	*Rule 361 Status*	Existing
Model	WH3000L		
Location Note	Added note: D-3, Swimming Pool and Old Gym, Building 479 :: building 479		
Emission Control Basis	Uncontrolled		
Device Description	natural draft full modulation mode		

11.2 Water Heater 2

Device ID #	**114113**	***Device Name***	**Water Heater 2**
Rated Heat Input	3.000 MMBtu/Hour	*Operator ID*	B2
		Serial Number	53804
Manufacturer	Parker	*Rule 361 Status*	Existing
Model	WH3000L		
Location Note	Added note: D-3, Swimming Pool and Old Gym, Building 479 :: building 479		
Emission Control Device	Uncontrolled		
Description	natural draft full modulation mode		

12 Building 503, Engineering II, D-5

12.1 Boiler B-1

Device ID #	**388948**	***Device Name***	**Boiler B-1**
Rated Heat Input	1.460 MMBtu/Hour	*Operator ID*	B-1
		Serial Number	59157
Manufacturer	Parker		
Model	T1460LR	*Stacked Unit?*	Yes
Location Note	Building 503		
Emission Control Device	R360		
Description	Low-NOx Burner, Flue Gas Recirculation, Forced Draft, Stacked with six (6) Lochinvar boilers in Building 503		

12.2 Boiler B-2

Device ID #	**386140**	***Device Name***	**Boiler B-2**
Rated Heat Input	1.500 MMBtu/Hour	*Operator ID*	B-2
		Serial Number	F12H00241473
Manufacturer	Lochinvar		
Model	SBN1500M7	*Stacked Unit?*	Yes
Location Note	Building 503 (Engineering II)		
Emission Control Basis	R360		
Device Description	Stacked hot water boiler. Fired on PUC Gas. Equipped with Low-NOx burner with a 10:1 turndown ratio. Certified by SCAQMD to meet 20 ppmv NOx @ 3% O2. Connected to a shared, pressure and temperature corrected gas meter.		

12.3 Boiler B-3

Device ID #	**386141**	***Device Name***	**Boiler B-3**
Rated Heat Input	1.500 MMBtu/Hour	*Operator ID*	B-3
		Serial Number	F12H00241471
Manufacturer	Lochinvar		
Model	SBN1500M7	*Stacked Unit?*	Yes
Location Note	Building 503 (Engineering II)		
Emission Control Basis	R360		
Device Description	Stacked hot water boiler. Fired on PUC Gas. Equipped with Low-NOx burner with a 10:1 turndown ratio. Certified by SCAQMD to meet 20 ppmv NOx @ 3% O2. Connected to a shared, pressure and temperature corrected gas meter.		

12.4 Boiler B-4

Device ID #	**386142**	***Device Name***	**Boiler B-4**
Rated Heat Input	1.500 MMBtu/Hour	*Operator ID*	B-4
		Serial Number	F12h00241472
Manufacturer	Lochinvar		
Model	SBN1500M7	*Stacked Unit?*	Yes
Location Note	Building 503 (Engineering II)		
Emission Control Basis	R360		
Device Description	Stacked hot water boiler. Fired on PUC Gas. Equipped with Low-NOx burner with a 10:1 turndown ratio. Certified by SCAQMD to meet 20 ppmv NOx @ 3% O2. Connected to a shared, pressure and temperature corrected gas meter.		

12.5 Boiler B-5

Device ID #	**386143**	***Device Name***	**Boiler B-5**
Rated Heat Input	1.500 MMBtu/Hour	*Operator ID*	B-5
		Serial Number	F12H00241477
Manufacturer	Lochinvar		
Model	SBN1500M7	*Stacked Unit?*	Yes
Location Note	Building 503 (Engineering II)		
Emission Control Basis	R360		
Device Description	Stacked hot water boiler. Fired on PUC Gas. Equipped with Low-NOx burner with a 10:1 turndown ratio. Certified by SCAQMD to meet 20 ppmv NOx @ 3% O2. Connected to a shared, pressure and temperature corrected gas meter.		

12.6 Boiler B-6

Device ID #	**386144**	***Device Name***	**Boiler B-6**
Rated Heat Input	1.500 MMBtu/Hour	*Operator ID*	B-6
		Serial Number	F12H00241470
Manufacturer	Lochinvar		
Model	SBN1500M7	*Stacked Unit?*	Yes
Location Note	Building 503 (Engineering II)		
Emission Control Basis	R360		
Device Description	Stacked hot water boiler. Fired on PUC Gas. Equipped with Low-NOx burner with a 10:1 turndown ratio. Certified by SCAQMD to meet 20 ppmv NOx @ 3% O2. Connected to a shared, pressure and temperature corrected gas meter.		

12.7 Boiler B-7

Device ID #	**386145**	***Device Name***	**Boiler B-7**
Rated Heat Input	1.500 MMBtu/Hour	*Operator ID*	B-7
		Serial Number	F12H00241476
Manufacturer	Lochinvar		
Model	SBN1500M7	*Stacked Unit?*	Yes
Location Note	Building 503 (Engineering II)		
Emission Control Basis	R360		
Device Description	Stacked hot water boiler. Fired on PUC Gas. Equipped with Low-NOx burner with a 10:1 turndown ratio. Certified by SCAQMD to meet 20 ppmv NOx @ 3% O2. Connected to a shared, pressure and temperature corrected gas meter.		

12.8 Emergency Backup Generator

Device ID #	114134	*Maximum Rated BHP*	798.00
Device Name	Emergency Backup Generator	*Serial Number*	FSE03077
Engine Use	Electrical Power	*EPA Engine Family Name*	9CPXL15.2ESW
Manufacturer	Caterpillar	*Operator ID*	B-1
Model Year	2009	*Fuel Type*	CARB Diesel - ULSD
Model	C15		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note	Added note: D-5, Engineering II, Building 503 :: Building 503, Engineering II, UCSB		
Device Description	Tier 2, turbocharged, diesel-fired, internal combustion engine equipped with direct diesel injection, a charge air cooler and an engine control module.		

13 Building 505, Events Center, E-2

13.1 Boiler B-1

Device ID #	**393029**	***Device Name***	**Boiler B-1**
Rated Heat Input	1.450 MMBtu/Hour	*Operator ID*	B1
		Serial Number	63804
Manufacturer	Parker Boilers		
Model	G-1536RL	*Stacked Unit?*	Yes
Location Note			
Emission Control Basis	R360		
Device Description	Hot Water Boiler equipped with a Low-NOx burner and a shared temperature and pressure corrected fuel meter		

13.2 Boiler B-2

Device ID #	**393030**	***Device Name***	**Boiler B-2**
Rated Heat Input	1.450 MMBtu/Hour	*Operator ID*	B2
		Serial Number	63803
Manufacturer	Parker Boilers		
Model	G-1536RL	*Stacked Unit?*	Yes
Location Note			
Emission Control Basis	R360		
Device Description	Hot Water Boiler equipped with a Low-NOx burner and a shared temperature and pressure corrected fuel meter		

14 Building 506, New Classroom Building

Device ID #	**398570**	***Device Name***	**Building 506, New Classroom Building**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	132465
Location Note			
Device Description	New device: 398570		

14.1 E/S Engine

Device ID #	395544	*Maximum Rated BHP*	161.00
Device Name	E/S Engine	*Serial Number*	TBD
Engine Use	Electrical Power	*EPA Engine Family Name*	MPKXL04.4NR1
Manufacturer	Caterpillar/Perkins	*Operator ID*	
Model Year	2021	*Fuel Type*	CARB Diesel - ULSD
Model	C4.4		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	40
Location Note			
Device Description	Emergency standby engine/generator set located at Building 506 of UCSB. EPA Tier 3; turbocharged and aftercooled; Family name MPKXL04.4NR1.		

15 Building 511, Multi-Activity Center (MAC), C-3

15.1 E/S Diesel Engine

Device ID #	114052	*Maximum Rated BHP*	170.00
Device Name	E/S Diesel Engine	*Serial Number*	46407855
Engine Use	Electrical Power	*EPA Engine Family Name*	4CEXL0359AAF
Manufacturer	Cummins	*Operator ID*	
Model Year	2004	*Fuel Type*	CARB Diesel - ULSD
Model	6BTA5.9-G4		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: C-3, Recreation Center, Building 511 ::		
Device Description	Emergency engine provides power for the Recreation Center Expansion.		

16 Building 512, Bioengineering

16.1 E/S Diesel Generator

Device ID #	388947	*Maximum Rated BHP*	1881.00
Device Name	E/S Diesel Generator	*Serial Number*	17394
Engine Use	Electrical Power	*EPA Engine Family Name*	GMVXL49.0BBA
Manufacturer	Mitsubishi	*Operator ID*	G 512
Model Year	2016	*Fuel Type*	CARB Diesel - ULSD
Model	S12R-Y2PTAW-1		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note			
Device Description	DICE 388947		

16.2 Boiler #1

Device ID #	**394908**	***Device Name***	**Boiler #1**
Rated Heat Input	4.000 MMBtu/Hour	*Operator ID*	B1
		Serial Number	061623076
Manufacturer	Camus	*Rule 361 Status*	New/Mod
Model	AVNH400		
Location Note	512 - Bioengineering		
Emission Control Basis	BACT		
Device Description	Replacement Low-NOx burner for a Camus Boiler. DID# 388945. Forced draft, full modulation. Equipped with a dedicated pressure and temperature corrected Roots 3M175 rotary fuel meter.		

16.3 Boiler #2

Device ID #	**394910**	***Device Name***	**Boiler #2**
Rated Heat Input	4.000 MMBtu/Hour	*Operator ID*	B2
		Serial Number	061623075
Manufacturer	Camus	*Rule 361 Status*	New/Mod
Model	AVNH400		
Location Note	512 - Bioengineering		
Emission Control Basis	BACT		
Device Description	Replacement Low-NOx burner for a Camus Boiler DID# 388946. Forced draft, full modulation. Equipped with a dedicated pressure and temperature corrected Roots 3M175 rotary fuel meter.		

16.4 Boiler #6

Device ID #	**388933**	***Device Name***	**Boiler #6**
Rated Heat Input	0.398 MMBtu/Hour	*Operator ID*	Boiler 6
		Serial Number	A77837319
Manufacturer	Fulton		
Model	ISC-9.5	*Stacked Unit?*	Yes
Location Note	Building 512		
Emission Control Basis	BACT		
Device Description	Low-NOx Burner, Flue Gas Recirculation. SCAQMD Certified 20 ppmv NOx. Stacked Unit		

16.5 Boiler #7

Device ID #	**388935**	***Device Name***	**Boiler #7**
Rated Heat Input	0.398 MMBtu/Hour	*Operator ID*	Boiler 7
		Serial Number	A77837315
Manufacturer	Fulton		
Model	ISC-9.5	*Stacked Unit?*	Yes
Location Note	Building 512		
Emission Control Basis	BACT		
Device Description	Low-NOx Burner, Flue Gas Recirculation. SCAQMD Certified 20 ppmv NOx. Stacked Unit		

16.6 Boiler #8

Device ID #	**388936**	***Device Name***	**Boiler #8**
Rated Heat Input	0.398 MMBtu/Hour	*Operator ID*	Boiler 8
		Serial Number	A77837311
Manufacturer	Fulton		
Model	ISC-9.5	*Stacked Unit?*	Yes
Location Note	Building 512		
Emission Control Basis	BACT		
Device Description	Low-NOx Burner, Flue Gas Recirculation. SCAQMD Certified 20 ppmv NOx. Stacked Unit		

16.7 Boiler #9

Device ID #	**388937**	***Device Name***	**Boiler #9**
Rated Heat Input	0.398 MMBtu/Hour	*Operator ID*	Boiler 9
		Serial Number	A77837324
Manufacturer	Fulton		
Model	ISC-9.5	*Stacked Unit?*	Yes
Location Note	Building 512		
Emission Control Basis	BACT		
Device Description	Low-NOx Burner, Flue Gas Recirculation. SCAQMD Certified 20 ppmv NOx. Stacked Unit		

16.8 Boiler #10

Device ID #	**388938**	***Device Name***	**Boiler #10**
Rated Heat Input	0.398 MMBtu/Hour	*Operator ID*	Boiler 10
		Serial Number	A77837316
Manufacturer	Fulton		
Model	ISC-9.5	*Stacked Unit?*	Yes
Location Note	Building 512		
Emission Control Basis	BACT		
Device Description	Low-NOx Burner, Flue Gas Recirculation. SCAQMD Certified 20 ppmv NOx. Stacked Unit		

16.9 Boiler #11

Device ID #	**388939**	***Device Name***	**Boiler #11**
Rated Heat Input	0.398 MMBtu/Hour	*Operator ID*	Boiler 11
		Serial Number	A77837325
Manufacturer	Fulton		
Model	ISC-9.5	*Stacked Unit?*	Yes
Location Note	Building 512		
Emission Control Basis	BACT		
Device Description	Low-NOx Burner, Flue Gas Recirculation. SCAQMD Certified 20 ppmv NOx. Stacked Unit		

16.10 Boiler #12

Device ID #	**388940**	***Device Name***	**Boiler #12**
Rated Heat Input	0.398 MMBtu/Hour	*Operator ID*	Boiler 12
		Serial Number	A77837308
Manufacturer	Fulton		
Model	ISC-9.5	*Stacked Unit?*	Yes
Location Note	Building 512		
Emission Control Basis	BACT		
Device Description	Low-NOx Burner, Flue Gas Recirculation. SCAQMD Certified 20 ppmv NOx. Stacked Unit		

16.11 Boiler #13

Device ID #	**388941**	***Device Name***	**Boiler #13**
Rated Heat Input	0.398 MMBtu/Hour	*Operator ID*	Boiler 13
		Serial Number	A77837322
Manufacturer	Fulton		
Model	ISC-9.5	*Stacked Unit?*	Yes
Location Note	Building 512		
Emission Control Basis	BACT		
Device Description	Low-NOx Burner, Flue Gas Recirculation. SCAQMD Certified 20 ppmv NOx. Stacked Unit		

17 Building 515, Humanities & Social Sciences (HSSB), E-2

17.1 Boiler 1

Device ID #	**114092**	***Device Name***	**Boiler 1**
Rated Heat Input	2.500 MMBtu/Hour	*Operator ID*	B1
		Serial Number	77016
Manufacturer	Brayn	*Rule 361 Status*	Existing
Model	AB250WFDGWLX		
Location Note	Added note: E-2, Humanities & Social Sciences, Building 515 :: building 515		
Emission Control Basis	Uncontrolled		
Device Description	forced draft full modulation mode		

17.2 Boiler 2

Device ID #	**114093**	***Device Name***	**Boiler 2**
Rated Heat Input	2.500 MMBtu/Hour	*Operator ID*	B2
		Serial Number	77061
Manufacturer	Brayn	*Rule 361 Status*	Existing
Model	AB250WFDGWLX		
Location Note	Added note: E-2, Humanities & Social Sciences, Building 515 :: building 515		
Emission Control Basis	Uncontrolled		
Device Description	forced draft full modulation mode		

17.3 Boiler 3

Device ID #	**114094**	***Device Name***	**Boiler 3**
Rated Heat Input	2.500 MMBtu/Hour	*Operator ID*	B3
		Serial Number	77053
Manufacturer	Brayn	*Rule 361 Status*	Existing
Model	AB250WFDGWLX		
Location Note	Added note: E-2, Humanities & Social Sciences, Building 515 :: building 515		
Emission Control Basis	Uncontrolled		
Device Description	forced draft full modulation mode		

17.4 E/S Diesel Engine

Device ID #	114051	*Maximum Rated BHP*	750.00
Device Name	E/S Diesel Engine	*Serial Number*	71237406
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Detroit Diesel	*Operator ID*	
Model Year	1995	*Fuel Type*	CARB Diesel - ULSD
Model	12V71TA		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: E-2, Humanities & Social Sciences, Building 515 ::		
Device Description	Emergency engine provides power for the Humanities and Social Services Building.		

18 Building 516, Recreation Center, C-3

18.1 Boiler #1

Device ID #	**393622**	***Device Name***	**Boiler #1**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B5
		Serial Number	604297800308
Manufacturer	Cleaver Brooks		
Model	CFCE700-2000-125HW	*Stacked Unit?*	Yes
Location Note	Building 516		
Emission Control Basis	R360		
Device Description	forced draft, fully modulated hot water boiler. low-NOx burner. Equipped with a shared temperature and pressure corrected fuel meter. Stacked with DID# 363623 and #363624		

18.2 Boiler #2

Device ID #	**393623**	***Device Name***	**Boiler #2**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B6
		Serial Number	604297800307
Manufacturer	Cleaver Brooks		
Model	CFCE700-2000-125HW	*Stacked Unit?*	Yes
Location Note	Building 516		
Emission Control Basis	R360		
Device Description	forced draft, fully modulated hot water boiler. low-NOx burner. Equipped with a shared temperature and pressure corrected fuel meter. Stacked with DID# 363622 and #363624		

18.3 Boiler #3

Device ID #	**393624**	***Device Name***	**Boiler #3**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B7
		Serial Number	604297800309
Manufacturer	Cleaver Brooks		
Model	CFCE700-2000-125HW	*Stacked Unit?*	Yes
Location Note	Building 516		
Emission Control Basis	R360		
Device Description	forced draft, fully modulated hot water boiler. low-NOx burner. Equipped with a shared temperature and pressure corrected fuel meter. Stacked with DID# 363622 and #363623		

18.4 E/S Diesel Engine

Device ID #	114050	*Maximum Rated BHP*	68.00
Device Name	E/S Diesel Engine	*Serial Number*	45027206
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Cummins	*Operator ID*	
Model Year	1994	*Fuel Type*	CARB Diesel - ULSD
Model	4B3.9-G		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: C-3, Recreation Center, Building 516 ::		
Device Description	Emergency engine provides power for the Recreation Center.		

19 Building 520, Marine Science Institute (MSRB), E-5

19.1 Boiler 1

Device ID #	**114084**	***Device Name***	**Boiler 1**
Rated Heat Input	4.600 MMBtu/Hour	*Operator ID*	B1
		Serial Number	54936
Manufacturer	Parker	*Rule 361 Status*	Existing
Model	T4600LR		
Location Note	Added note: E-5, Marine Science Institute, Building 520 :: building 520		
Emission Control Basis	Uncontrolled		
Device Description	natural draft full modulation mode		

19.2 E/S Diesel Engine

Device ID #	114049	*Maximum Rated BHP*	755.00
Device Name	E/S Diesel Engine	*Serial Number*	79011459
Engine Use	Electrical Power	*EPA Engine Family Name*	3CEXL015ABA
Manufacturer	Cummins	*Operator ID*	
Model Year	2003	*Fuel Type*	CARB Diesel - ULSD
Model	QSX15-G9		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: E-5, Marine Science Institute, Building 520 ::		
Device Description	Emergency engine provides power for the Marine Science Building.		

20 Building 521, Bren Hall, E-5

20.1 Boiler 1

Device ID #	**114085**	***Device Name***	**Boiler 1**
Rated Heat Input	2.970 MMBtu/Hour	*Operator ID*	B1
		Serial Number	52867
Manufacturer	Parker	*Rule 361 Status*	Existing
Model	T2970LR		
Location Note	Added note: E-5, Bren Hall, Building 521 :: building 521		
Emission Control Basis	Uncontrolled		
Device Description	natural draft full modulation mode		

20.2 E/S Diesel Engine

Device ID #	114048	*Maximum Rated BHP*	535.00
Device Name	E/S Diesel Engine	*Serial Number*	30364491
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Cummins	*Operator ID*	
Model Year	2003	*Fuel Type*	CARB Diesel - ULSD
Model	NTA-855-G3		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: E-5, Bren Hall, Building 521 ::		
Device Description	Emergency engine provides power for the Bren School of Environmental Science and Management Building.		

21 Building 525, Davidson Library, E-4

21.1 Hot-Water Boiler #1

Device ID #	**393439**	***Device Name***	**Hot-Water Boiler #1**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B1
		Serial Number	63993
Manufacturer	Parker Boilers		
Model	204L-G2304R(L)	*Stacked Unit?*	Yes
Location Note	Building 525 - Davidson Library		
Emission Control Basis	R360		
Device Description	Forced draft hot water boiler, equipped with a Low-NOx burner. The default rating method is used for fuel usage.		

21.2 Hot-Water Boiler #2

Device ID #	**393440**	***Device Name***	**Hot-Water Boiler #2**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B2
		Serial Number	63994
Manufacturer	Parker Boilers		
Model	204L-G2304R(L)	*Stacked Unit?*	Yes
Location Note	Building 525 - Davidson Library		
Emission Control Basis	R360		
Device Description	Forced draft hot water boiler, equipped with a Low-NOx burner. The default rating method is used for fuel usage.		

21.3 E/S Diesel Generator

Device ID #	386852	*Maximum Rated BHP*	762.00
Device Name	E/S Diesel Generator	*Serial Number*	FTE01713
Engine Use	Electrical Power	*EPA Engine Family Name*	ECPXL15.2NZS
Manufacturer	Caterpillar	*Operator ID*	
Model Year	2014	*Fuel Type*	CARB Diesel - ULSD
Model	C15		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note	UCSB Davidson Library, Building 525		
Device Description	Tier 2, turbocharged, diesel-fired internal combustion engine with aftercooler.		

22 Building 526, Webb Hall

22.1 Boiler 1

Device ID #	**387978**	***Device Name***	**Boiler 1**
Rated Heat Input	1.410 MMBtu/Hour	*Operator ID*	B1
		Serial Number	53909
Manufacturer	Parker		
Model	WH1410		
Location Note	Building 526		
Emission Control Basis	NA		
Device Description	uncontrolled existing unit, Natural Draft, stacked with device 387979		

22.2 Boiler 2

Device ID #	**387979**	***Device Name***	**Boiler 2**
Rated Heat Input	1.410 MMBtu/Hour	*Operator ID*	B2
		Serial Number	53910
Manufacturer	Parker		
Model	WH1410		
Location Note	Building 526		
Emission Control Basis	NA		
Device Description	uncontrolled existing unit, Natural Draft, stacked with device 387978		

22.3 E/S Engine

Device ID #	393041	*Maximum Rated BHP*	96.00
Device Name	E/S Engine	*Serial Number*	E5G04793
Engine Use	Electrical Power	*EPA Engine Family Name*	JPKXL04.4NP1
Manufacturer	Caterpillar	*Operator ID*	G 526
Model Year	2018	*Fuel Type*	CARB Diesel - ULSD
Model	1104D-E44T (C4.4)		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note			
Device Description	EPA Certified Tier 3 Engine Turbocharged		

23 Building 528, South Hall, E-3

23.1 Boiler 1

Device ID #	**393266**	***Device Name***	**Boiler 1**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B1
		Serial Number	63767
Manufacturer	Parker		
Model	G2304RL	*Stacked Unit?*	Yes
Location Note	Building 528		
Emission Control Basis	R360		
Device Description	Hot water boiler, equipped with a Low-NOx burner. Replaces existing Rule 361 unit at building 528. Unit installed in 2018, subject to Rule 360 Table 1 emission limits.		

23.2 Boiler 2

Device ID #	**387629**	***Device Name***	**Boiler 2**
Rated Heat Input	1.500 MMBtu/Hour	*Operator ID*	B2
		Serial Number	83759
Manufacturer	Bryan Boiler		
Model	AB150-W-FDG-LX	*Stacked Unit?*	No
Location Note	E-3, South Hall, Building 528 :: building 528		
Emission Control Basis	NA		
Device Description	Forced Draft Full Modulation Flue Gas Recirculation Unit Manufactured in 1999		

24 Building 529, Main Sewage Pump, D-6

24.1 E/S Diesel Engine

Device ID #	393551	*Maximum Rated BHP*	324.00
Device Name	E/S Diesel Engine	*Serial Number*	74508659
Engine Use	Electrical Power	*EPA Engine Family Name*	KCEXL0409AAD
Manufacturer	Cummins	*Operator ID*	G 529-01
Model Year	2019	*Fuel Type*	CARB Diesel - ULSD
Model	QSB7		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note	Sewage Lift Station – Bldg. 529		
Device Description	US EPA certified Tier 3 diesel generator. No after-treatment controls installed. Turbocharged and aftercooled. Emergency engine provides power for the main sewage pump at the East Gate. Replaced DID# 114031.		

24.2 E/S Diesel Engine

Device ID #	393552	*Maximum Rated BHP*	324.00
Device Name	E/S Diesel Engine	*Serial Number*	74508336
Engine Use	Electrical Power	*EPA Engine Family Name*	KCEXL0409AAD
Manufacturer	Cummins	*Operator ID*	G 529-02
Model Year	2019	*Fuel Type*	CARB Diesel - ULSD
Model	QSB7		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note	Sewage Lift Station – Bldg. 529		
Device Description	US EPA certified Tier 3 diesel generator. No after-treatment controls installed. Turbocharged and aftercooled. Emergency engine provides power for the main sewage pump at the East Gate. Replaced DID# 114032.		

25 Building 531, Lotte Lehmann Concert Hall, E-3

25.1 E/S Diesel Engine

Device ID #	394710	*Maximum Rated BHP*	69.00
Device Name	E/S Diesel Engine	*Serial Number*	72046732
Engine Use	Electrical Power	*EPA Engine Family Name*	KCEXL03.3BAA
Manufacturer	Cummins	*Operator ID*	G 531
Model Year	2019	*Fuel Type*	CARB Diesel - ULSD
Model	4BT3.3-G5		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note	Building 531 - Music and Lotte Lehmann Concert Hall		
Device Description	Tier 3 E/S DICE. Turbocharged/aftercooled		

26 Building 533, Rob Gym

26.1 Boiler 4

Device ID #	**387982**	***Device Name***	**Boiler 4**
Rated Heat Input	1.900 MMBtu/Hour	*Operator ID*	B4
		Serial Number	53109
Manufacturer	Parker		
Model	WH1900		
Location Note	Building 533		
Emission Control Basis	NA		
Device Description	uncontrolled existing unit, Natural Draft, On/Off Mode, stacked with device 387983		

26.2 Boiler 3

Device ID #	**387983**	***Device Name***	**Boiler 3**
Rated Heat Input	1.900 MMBtu/Hour	*Operator ID*	B3
		Serial Number	53108
Manufacturer	Parker		
Model	WH1900		
Location Note	Building 533		
Emission Control Basis	NA		
Device Description	uncontrolled existing unit, Natural Draft, On/Off Mode, stacked with device 387982		

26.3 Boiler 2

Device ID #	**387981**	***Device Name***	**Boiler 2**
Rated Heat Input	1.900 MMBtu/Hour	*Operator ID*	B2
		Serial Number	53111
Manufacturer	Parker		
Model	WH1900		
Location Note	Building 533		
Emission Control Basis	NA		
Device Description	uncontrolled existing unit, Natural Draft, On/Off Mode, stacked with device 387980		

26.4 Boiler 1

Device ID #	**387980**	***Device Name***	**Boiler 1**
Rated Heat Input	1.900 MMBtu/Hour	*Operator ID*	B1
		Serial Number	53110
Manufacturer	Parker		
Model	WH1900		
Location Note	Building 533		
Emission Control Basis	NA		
Device Description	uncontrolled existing unit, Natural Draft, On/Off Mode, stacked with device 387981		

27 Building 534, Arts (Art Museum), E-3,

27.1 Boiler B-1

Device ID #	**114710**	***Device Name***	**Boiler B-1**
Rated Heat Input	2.970 MMBtu/Hour	*Operator ID*	B-1
		Serial Number	60806
Manufacturer	Parker	*Rule 361 Status*	New/Mod
Model	T-2970LR		
Location Note	E-3, Arts (Art Museum), Building 534		
Emission Control Basis	R361		
Device Description	Hot Water Boiler Fired on PUC gas Forced Draft Full Modulation		

27.2 Boiler B-2

Device ID #	**114711**	***Device Name***	**Boiler B-2**
Rated Heat Input	2.970 MMBtu/Hour	*Operator ID*	B-2
		Serial Number	60805
Manufacturer	Parker	*Rule 361 Status*	New/Mod
Model	T-2970LR		
Location Note	E-3, Arts (Art Museum), Building 534		
Emission Control Basis	R361		
Device Description	Hot Water Boiler Fired on PUC gas Forced Draft Full Modulation		

27.3 Hot-Water Boiler #1

Device ID #	**393444**	***Device Name***	**Hot-Water Boiler #1**
Rated Heat Input	2.600 MMBtu/Hour	*Operator ID*	B1
		Serial Number	64023
Manufacturer	Parker Boilers	*Rule 361 Status*	New/Mod
Model	204L-G2640R(L)		
Location Note	Building 534		
Emission Control Basis	R361		
Device Description	Forced draft hot water boiler, equipped with a Low-NOx burner. Unit de-rated by manufacturer to 2.600 MMBtu/hr from 2.640 MMBtu/hr using a preprogrammed Variable Frequency Drive to control fan speed and maximum inlet gas flow.		

28 Building 535, North Hall, D-4

28.1 E/S Diesel-fired Generator

Device ID #	114139	*Maximum Rated BHP*	755.00
Device Name	E/S Diesel-fired Generator	*Serial Number*	79468706
Engine Use	Electrical Power	*EPA Engine Family Name*	BCEXL015.AAJ
Manufacturer	Cummins	*Operator ID*	
Model Year	2011	*Fuel Type*	CARB Diesel - ULSD
Model	QSX15-G9 NR2		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note	Added note: D-4, North Hall, Building 535 :: UCSB North Hall Data Center Building 535, Santa Barbara, 93106		
Device Description	Direct Diesel Injection, Turbocharger, Charge Air Cooler, Engine Control Module		

29 Building 542,Ortega Dining Common, F-3

29.1 E/S Diesel Engine

Device ID #	114059	*Maximum Rated BHP*	56.00
Device Name	E/S Diesel Engine	*Serial Number*	70874
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Generac	*Operator ID*	
Model Year	1999	*Fuel Type*	CARB Diesel - ULSD
Model	70874		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: F-3, Ortega, Building 542 ::		
Device Description	Emergency engine provides power for the Ortega Dining Commons.		

30 Building 544, Noble Hall, E-4

30.1 Boiler 1

Device ID #	**114079**	***Device Name***	**Boiler 1**
Rated Heat Input	2.600 MMBtu/Hour	*Operator ID*	B1
		Serial Number	58121
Manufacturer	Parker	*Rule 361 Status*	Existing
Model	T2600L		
Location Note	Added note: E-4, Noble Hall, Building 544 :: building 544		
Emission Control Basis	Uncontrolled		
Device Description	natural draft on/off mode		

30.2 Boiler 2

Device ID #	**114080**	***Device Name***	**Boiler 2**
Rated Heat Input	2.600 MMBtu/Hour	*Operator ID*	B2
		Serial Number	58120
Manufacturer	Parker	*Rule 361 Status*	Existing
Model	T2600L		
Location Note	Added note: E-4, Noble Hall, Building 544 :: building 544		
Emission Control Basis	Uncontrolled		
Device Description	natural draft on/off mode		

30.3 E/S Diesel Engine

Device ID #	114047	*Maximum Rated BHP*	382.00
Device Name	E/S Diesel Engine	*Serial Number*	9NR04906
Engine Use	Electrical Power	*EPA Engine Family Name*	iYCPXL105MRD
Manufacturer	Caterpillar	*Operator ID*	
Model Year	2001	*Fuel Type*	CARB Diesel - ULSD
Model	3306		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: E-4, Noble Hall, Building 544 ::		
Device Description	Emergency engine provides power for Noble Hall.		

31 Building 548, Santa Cruz, F-5

32 Building 549, De La Guerra (DLG), F-4

32.1 Boiler 1

Device ID #	**393267**	***Device Name***	**Boiler 1**
Rated Heat Input	2.940 MMBtu/Hour	*Operator ID*	B1
		Serial Number	63950
Manufacturer	Parker	*Rule 361 Status*	New/Mod
Model	105L-70		
Location Note	Building 549		
Emission Control Basis	R361		
Device Description	Steam boiler, equipped with a Low-NOx burner. Replaces an existing Rule 361 unit at building 549.		

32.2 Boiler 2

Device ID #	**393268**	***Device Name***	**Boiler 2**
Rated Heat Input	2.940 MMBtu/Hour	*Operator ID*	B2
		Serial Number	63946
Manufacturer	Parker	*Rule 361 Status*	New/Mod
Model	105L-70		
Location Note	Building 549		
Emission Control Basis	R361		
Device Description	Steam boiler, equipped with a Low-NOx burner. Replaces an existing Rule 361 unit at building 549.		

32.3 E/S Diesel Engine

Device ID #	114046	*Maximum Rated BHP*	292.00
Device Name	E/S Diesel Engine	*Serial Number*	6D16-965772
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Mitsubishi	*Operator ID*	
Model Year	2004	*Fuel Type*	CARB Diesel - ULSD
Model	OD5703		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: F-4, De La Guerra, Building 549 ::		
Device Description	Emergency engine provides power for De La Guerra.		

33 Building 551, Psychology, E-4

33.1 Boiler 1

Device ID #	**393269**	***Device Name***	**Boiler 1**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B1
		Serial Number	63968
Manufacturer	Parker		
Model	G2304RL	*Stacked Unit?*	Yes
Location Note	Bldg. 551		
Emission Control Basis	R360		
Device Description	Hot water boiler, equipped with a Low-NOx burner. Replaces an existing Rule 361 boiler (DID# 114100).		

33.2 Boiler 2

Device ID #	**393270**	***Device Name***	**Boiler 2**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B2
		Serial Number	63975
Manufacturer	Parker		
Model	G2304RL	*Stacked Unit?*	Yes
Location Note	Bldg. 551		
Emission Control Basis	R360		
Device Description	Hot water boiler, equipped with a Low-NOx burner. Replaces an existing Rule 361 boiler (DID# 114101).		

33.3 E/S Diesel Engine

Device ID #	114045	*Maximum Rated BHP*	263.00
Device Name	E/S Diesel Engine	*Serial Number*	5YF02203
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Caterpillar	*Operator ID*	
Model Year	1995	*Fuel Type*	CARB Diesel - ULSD
Model	T2160		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: E-4, Psychology, Building 551 ::		
Device Description	Emergency engine provides power for the Psychology Building.		

34 Building 552, Cheadle Hall

34.1 Boiler 1

Device ID #	**393593**	***Device Name***	**Boiler 1**
Rated Heat Input	1.536 MMBtu/Hour	*Operator ID*	B1
		Serial Number	64090
Manufacturer	Parker Boilers		
Model	G-1536RL	*Stacked Unit?*	Yes
Location Note	Building 552		
Emission Control Basis	BACT		
Device Description	Hot-Water boiler equipped with a low-NOx burner. Stacked with DID# 393594.		

34.2 Boiler 2

Device ID #	**393594**	***Device Name***	**Boiler 2**
Rated Heat Input	1.536 MMBtu/Hour	*Operator ID*	B2
		Serial Number	64091
Manufacturer	Parker Boilers		
Model	G-1536RL	*Stacked Unit?*	Yes
Location Note	Building 552		
Emission Control Basis	BACT		
Device Description	Hot-Water boiler equipped with a low-NOx burner. Stacked with DID# 393593.		

35 Building 553, San Miguel Hall, F-3

35.1 Boiler #1

Device ID #	**393625**	***Device Name***	**Boiler #1**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B1
		Serial Number	64168
Manufacturer	Parker Boilers		
Model	204L-G2304R(L)	*Stacked Unit?*	Yes
Location Note	Building 553		
Emission Control Basis	R360		
Device Description	Hot water boiler. Forced draft/fully modulated. Low-NOx burner. Operates in a stacked configuration with DID 393626. Equipped with a shared fuel meter.		

35.2 Boiler #2

Device ID #	**393626**	***Device Name***	**Boiler #2**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B1
		Serial Number	64169
Manufacturer	Parker Boilers		
Model	204L-G2304R(L)	*Stacked Unit?*	Yes
Location Note	Building 553		
Emission Control Basis	R360		
Device Description	Hot water boiler. Forced draft/fully modulated. Low-NOx burner. Operates in a stacked configuration with DID 393625. Equipped with a shared fuel meter.		

35.3 Emergency Backup Generator

Device ID #	114064	*Maximum Rated BHP*	64.00
Device Name	Emergency Backup Generator	*Serial Number*	PE5030T083313
Engine Use	Electrical Power	*EPA Engine Family Name*	5DJXL03.0063
Manufacturer	John Deere	*Operator ID*	
Model Year	2005	*Fuel Type*	CARB Diesel - ULSD
Model	5030TF270		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note	Added note: F-3, San Miguel, Building 553 :: Building #553, San Miguel Hall, UCSB		
Device Description	Turbocharged, diesel-fired, internal combustion engine.		

36 Building 554, Hatlen Theater, E-2

36.1 Hot-Water Boiler #1

Device ID #	**393442**	***Device Name***	**Hot-Water Boiler #1**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B1
		Serial Number	64027
Manufacturer	Parker Boilers		
Model	204L-G2304R(L)	*Stacked Unit?*	Yes
Location Note	Building 554 - Theater and Dance		
Emission Control Basis	R360		
Device Description	Forced draft hot water boiler, equipped with a Low-NOx burner.		

36.2 Hot-Water Boiler #2

Device ID #	**393443**	***Device Name***	**Hot-Water Boiler #2**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B2
		Serial Number	64024
Manufacturer	Parker Boilers		
Model	204L-G2304R(L)	*Stacked Unit?*	Yes
Location Note	Building 554		
Emission Control Basis	R360		
Device Description	Forced draft hot water boiler, equipped with a Low-NOx burner.		

36.3 E/S Diesel Engine

Device ID #	**394712**	***Device Name***	**E/S Diesel Engine**
Rated Heat Input	0.489 MMBtu/Hour	*Physical Size*	69.00 Horsepower
Manufacturer	Cummins	*Operator ID*	G 554
Model	4BT3.3-G5	*Serial Number*	72046028
Location Note	Building 554 - Theater and Dance East & Hatlen Theater		
Device Description	Tier 3 E/S DICE. Turbocharged/aftercooled		

37 Building 555, Marine Biotechnology Laboratory (MBL), G-5

37.1 Aboveground Storage Tank

Device ID #	**114067**	***Device Name***	**Aboveground Storage Tank**
Rated Heat Input		*Physical Size*	500.00 Gallons
Manufacturer	Convault	*Operator ID*	
Model	RN0002SF	*Serial Number*	M234301
Location Note	Added note: G-5, Marine Biotechnology Laboratory, Building 555 ::		
Device Description	Equipped with Phase I Vapor Recovery only. G-70-102-A.		

37.2 E/S Diesel Engine

Device ID #	114033	*Maximum Rated BHP*	355.00
Device Name	E/S Diesel Engine	*Serial Number*	11483997
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Cummins	*Operator ID*	
Model Year	1988	*Fuel Type*	CARB Diesel - ULSD
Model	NT-855-G2		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: G-5, Marine Biotechnology Laboratory, Building 555 ::		
Device Description	Emergency engine provides power for the Marine Science and Biotech Seawater Laboratory.		

37.3 Gasoline Dispenser

Device ID #	**114066**	***Device Name***	**Gasoline Dispenser**
Rated Heat Input		*Physical Size*	
Manufacturer	Fill-Rite	*Operator ID*	
Model	FR702R	*Serial Number*	B3194582
Location Note	Added note: G-5, Marine Biotechnology Laboratory, Building 555 ::		
Device Description	Dispenser has Fill-Rite cabinet pump unit. Model #FR702R.		

38 Building 556, Harold Frank Hall, E-5

38.1 E/S Diesel Engine

Device ID #	114044	*Maximum Rated BHP*	277.00
Device Name	E/S Diesel Engine	*Serial Number*	44352939
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Cummins	*Operator ID*	
Model Year	1989	*Fuel Type*	CARB Diesel - ULSD
Model	6CTA-8.3-G		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: E-5, Engineering I (Harold Frank Hall), Building 556 ::		
Device Description	Emergency engine provides power for the Engineering I Building.		

39 Building 557, Chemistry, D-5

39.1 E/S Diesel Engine

Device ID #	114043	*Maximum Rated BHP*	519.00
Device Name	E/S Diesel Engine	*Serial Number*	4ZR01873
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Caterpillar	*Operator ID*	
Model Year	1996	*Fuel Type*	CARB Diesel - ULSD
Model	3406		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: D-5, Physical Sciences, Building 557 ::		
Device Description	Emergency engine provides power for the Chemistry Building.		

40 Building 558, University Center (UCen), 558F-3

40.1 Hot-Water Boiler #1

Device ID #	**393447**	***Device Name***	**Hot-Water Boiler #1**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B1
		Serial Number	604297800235
Manufacturer	Cleaver Brooks		
Model	CFC-E2000	*Stacked Unit?*	Yes
Location Note	Building 558		
Emission Control Basis	R360		
Device Description	Forced draft, modulated hot water boiler, equipped with a Low-NOx burner and a dedicated pressure/temperature corrected fuel meter. Stacked with DID# 393448		

40.2 Hot-Water Boiler #2

Device ID #	**393448**	***Device Name***	**Hot-Water Boiler #2**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B2
		Serial Number	604297800230
Manufacturer	Cleaver Brooks		
Model	CFC-E2000	*Stacked Unit?*	Yes
Location Note	Building 558		
Emission Control Basis	R360		
Device Description	Forced draft, modulated hot water boiler, equipped with a Low-NOx burner and a dedicated pressure/temperature corrected fuel meter. Stacked with DID# 393447		

40.3 IC Engine

Device ID #	114130	*Maximum Rated BHP*	157.00
Device Name	IC Engine	*Serial Number*	E5M00597
Engine Use	Electrical Power	*EPA Engine Family Name*	8PKXL04.4NJ1
Manufacturer	CAT	*Operator ID*	
Model Year	2008	*Fuel Type*	CARB Diesel - ULSD
Model	C4.4		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note	Added note: F-3, University Center (UCen), Building 558 :: UCSB - B558 (UCEN)		
Device Description	New Tier 3 diesel-fired emergency backup generator		

41 Building 560, Phelps Hall, D-4

41.1 Hot-Water Boiler #1

Device ID #	**393441**	***Device Name***	**Hot-Water Boiler #1**
Rated Heat Input	3.120 MMBtu/Hour	*Operator ID*	B1
		Serial Number	64034
Manufacturer	Parker Boilers	*Rule 361 Status*	New/Mod
Model	204L-G3120RL		
Location Note	Building 560		
Emission Control Basis	R361		
Device Description	Forced draft hot water boiler, equipped with a Low-NOx burner.		

41.2 Boiler 2

Device ID #	**387971**	***Device Name***	**Boiler 2**
Rated Heat Input	1.500 MMBtu/Hour	*Operator ID*	B2
		Serial Number	83758
Manufacturer	Bryan Boiler		
Model	AB150-W-FDG-LX	*Stacked Unit?*	Yes
Location Note	Building 560		
Emission Control Basis	NA		
Device Description			

42 Building 561, San Nicolas Hall, F-4

42.1 Emergency Backup Generator

Device ID #	114070	*Maximum Rated BHP*	64.00
Device Name	Emergency Backup Generator	*Serial Number*	PE5030T141914
Engine Use	Electrical Power	*EPA Engine Family Name*	6JDXL03.0063
Manufacturer	John Deere/Generac	*Operator ID*	
Model Year	2006	*Fuel Type*	CARB Diesel - ULSD
Model	5030TF270		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note	Added note: F-4, San Nicolas, Building 561 :: Building 561, San Nicolas Hall, UCSB		
Device Description	Turbocharged, diesel-fired internal combustion engine.		

42.2 Hot-Water Boiler 1

Device ID #	**114131**	***Device Name***	**Hot-Water Boiler 1**
Rated Heat Input	1.530 MMBtu/Hour	*Operator ID*	B-1
		Serial Number	0708269652
Manufacturer	Raypak		
Model	H9-1532B	*Stacked Unit?*	Yes
Location Note	Added note: F-4, San Nicolas, Building 561 :: Building No. 561		
Emission Control Basis	R360		
Device Description	Forced Draft Full Modulation Installed: August, 2007		

42.3 Hot-Water Boiler 2

Device ID #	**114132**	***Device Name***	**Hot-Water Boiler 2**
Rated Heat Input	1.530 MMBtu/Hour	*Operator ID*	B-2
		Serial Number	0708269650
Manufacturer	Raypak		
Model	H9-1532B	*Stacked Unit?*	Yes
Location Note	Added note: F-4, San Nicolas, Building 561 :: Building No. 561		
Emission Control Basis	R360		
Device Description	Forced Draft Full Modulation Installed: August, 2007		

43 Building 562, Carrillo Dining Commons, F-1

43.1 E/S Diesel Engine

Device ID #	114038	*Maximum Rated BHP*	207.00
Device Name	E/S Diesel Engine	*Serial Number*	87802216
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Generac	*Operator ID*	
Model Year	2001	*Fuel Type*	CARB Diesel - ULSD
Model	92461		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: F-1, Dining Commons: Carrillo, Building 562 ::		
Device Description	Emergency engine provides power for the Carrillo Housing Building.		

43.2 Parker Boiler #1

Device ID #	**114251**	***Device Name***	**Parker Boiler #1**
Rated Heat Input	1.680 MMBtu/Hour	*Operator ID*	B1
		Serial Number	60479
Manufacturer	Parker Boiler		
Model	104-40L	*Stacked Unit?*	Yes
Location Note			
Emission Control Basis	R360		
Device Description	- Dresser Roots Shared Rotary Fuel Meter - Low - NOx Burner - Natural Gas		

43.3 Parker Boiler #2

Device ID #	**114252**	***Device Name***	**Parker Boiler #2**
Rated Heat Input	1.680 MMBtu/Hour	*Operator ID*	B2
		Serial Number	60480
Manufacturer	Parker Boiler		
Model	104-40L	*Stacked Unit?*	Yes
Location Note			
Emission Control Basis	R360		
Device Description	- Dresser Roots Shared Rotary Fuel Meter - Low - NOx Burner - Natural Gas		

43.4 Boiler B3

Device ID #	**395683**	***Device Name***	**Boiler B3**
Rated Heat Input	1.500 MMBtu/Hour	*Operator ID*	B3
		Serial Number	60436900460
Manufacturer	Cleaver Brooks		
Model	CFC-E-700-1500-125HW	*Stacked Unit?*	Yes
Location Note	Building 562 – Carrillo Dining Commons		
Emission Control Basis	BACT		
Device Description	- Dresser Roots Shared Rotary Fuel Meter - Forced Draft - Full Modulation - Natural Gas		

43.5 Boiler B2

Device ID #	**395684**	***Device Name***	**Boiler B2**
Rated Heat Input	1.500 MMBtu/Hour	*Operator ID*	B2
		Serial Number	
Manufacturer	Cleaver Brooks		
Model	CFC-E-700-1500-125HW	*Stacked Unit?*	Yes
Location Note	Building 562 – Carrillo Dining Commons		
Emission Control Basis	BACT		
Device Description	- Dresser Roots Shared Rotary Fuel Meter - Forced Draft - Full Modulation - Natural Gas		

44 Building 563, Ellison Hall, D-4

44.1 Boiler 1

Device ID #	**114124**	***Device Name***	**Boiler 1**
Rated Heat Input	4.600 MMBtu/Hour	*Operator ID*	B1
		Serial Number	53413
Manufacturer	Parker	*Rule 361 Status*	Existing
Model	T4600		
Location Note	Added note: D-4, Ellison Hall, Building 563 :: building 563		
Emission Control Basis	Uncontrolled		
Device Description	natural draft high/low fire mode		

44.2 Boiler 2

Device ID #	**114125**	***Device Name***	**Boiler 2**
Rated Heat Input	4.600 MMBtu/Hour	*Operator ID*	B2
		Serial Number	53412
Manufacturer	Parker	*Rule 361 Status*	Existing
Model	T4600		
Location Note	Added note: D-4, Ellison Hall, Building 563 :: building 563		
Emission Control Basis	Uncontrolled		
Device Description	natural draft high/low fire mode		

45 Building 564, Girvetz Hall, E-3

45.1 Boiler 1

Device ID #	**114110**	***Device Name***	**Boiler 1**
Rated Heat Input	2.100 MMBtu/Hour	*Operator ID*	B1
		Serial Number	62753
Manufacturer	Bryan	*Rule 361 Status*	Existing
Model	CL-210W-G1		
Location Note	Added note: E-3, Girvetz Hall, Building 564 :: building 564		
Emission Control Basis	Uncontrolled		
Device Description	natural draft on/off mode		

46 Building 565, Environmental Health & Safety (EH&S), B-2

46.1 E/S Diesel Engine

Device ID #	114042	*Maximum Rated BHP*	375.00
Device Name	E/S Diesel Engine	*Serial Number*	11652215
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Cummins	*Operator ID*	
Model Year	1995	*Fuel Type*	CARB Diesel - ULSD
Model	NT-855-G4		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: B-2, Environmental Health & Safety, Building 565 ::		
Device Description	Emergency engine provides power for the Environmental Health and Safety Building.		

47 Building 568, Student Affairs & Admin. Services, D-3

47.1 E/S Diesel Engine

Device ID #	114041	*Maximum Rated BHP*	166.00
Device Name	E/S Diesel Engine	*Serial Number*	7AK01958
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Caterpillar	*Operator ID*	
Model Year	1995	*Fuel Type*	CARB Diesel - ULSD
Model	3056		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: D-3, Student Affairs & Admin. Services, Building 568 ::		
Device Description	Emergency engine provides power for the Student Affairs, Administrative Services Building.		

48 Building 571, Biological Sciences II, E-5

48.1 E/S Diesel Engine

Device ID #	114040	*Maximum Rated BHP*	749.00
Device Name	E/S Diesel Engine	*Serial Number*	81Z24227
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Caterpillar	*Operator ID*	
Model Year	1999	*Fuel Type*	CARB Diesel - ULSD
Model	3412		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: E-5, Biological Sciences II, Building 571 ::		
Device Description	Emergency engine provides power for the Biological Sciences II Building.		

48.2 Hot-Water Boiler 1

Device ID #	**114135**	***Device Name***	**Hot-Water Boiler 1**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B-1
		Serial Number	60265
Manufacturer	Parker		
Model	G2304R(L)	*Stacked Unit?*	Yes
Location Note	Added note: E-5, Biological Sciences II, Building 571 :: Bio II Building 571		
Emission Control Basis	BACT		
Device Description	Forced Draft Full Modulation Connected to dedicated, temperature and pressure corrected Roots Meter model B3:3M		

48.3 Hot-Water Boiler 2

Device ID #	**114136**	***Device Name***	**Hot-Water Boiler 2**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B-2
		Serial Number	60262
Manufacturer	Parker		
Model	G2304R(L)	*Stacked Unit?*	Yes
Location Note	Added note: E-5, Biological Sciences II, Building 571 :: Bio II Building 571		
Emission Control Basis	BACT		
Device Description	Forced Draft Full Modulation Connected to dedicated, temperature and pressure corrected Roots Meter model B3:3M		

48.4 Hot-Water Boiler 3

Device ID #	**114137**	***Device Name***	**Hot-Water Boiler 3**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B-3
		Serial Number	60267
Manufacturer	Parker		
Model	G2304R(L)	*Stacked Unit?*	Yes
Location Note	Added note: E-5, Biological Sciences II, Building 571 :: Bio II Building 571		
Emission Control Basis	BACT		
Device Description	Forced Draft Full Modulation Connected to dedicated, temperature and pressure corrected Roots Meter model B3:3M		

48.5 Hot-Water Boiler 4

Device ID #	**114138**	***Device Name***	**Hot-Water Boiler 4**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B-4
		Serial Number	60266
Manufacturer	Parker		
Model	G2304R(L)	*Stacked Unit?*	Yes
Location Note	Added note: E-5, Biological Sciences II, Building 571 :: Bio II Building 571		
Emission Control Basis	BACT		
Device Description	Forced Draft Full Modulation Connected to dedicated, temperature and pressure corrected Roots Meter model B3:3M		

49 Building 572, Broida Hall, E-5

49.1 E/S Diesel Engine

Device ID #	114039	*Maximum Rated BHP*	755.00
Device Name	E/S Diesel Engine	*Serial Number*	14016239
Engine Use	Electrical Power	*EPA Engine Family Name*	1YCEXL015ABA
Manufacturer	Cummins	*Operator ID*	
Model Year	2001	*Fuel Type*	CARB Diesel - ULSD
Model	QSX15-G9		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: E-5, Broida Hall (Physics), Building 572 ::		
Device Description	Emergency engine provides power for Broida Hall.		

50 Building 574, Public Safety, A-1

50.1 E/S Diesel Engine #1

Device ID #	114037	*Maximum Rated BHP*	299.00
Device Name	E/S Diesel Engine #1	*Serial Number*	5YF01385
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Caterpillar	*Operator ID*	
Model Year	1993	*Fuel Type*	CARB Diesel - ULSD
Model	3208		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: A-1, Public Safety, Building 574 ::		
Device Description	Emergency engine provides power for the Public Safety Community Services Building.		

50.2 E/S Diesel Engine

Device ID #	394714	*Maximum Rated BHP*	69.00
Device Name	E/S Diesel Engine	*Serial Number*	72046731
Engine Use	Electrical Power	*EPA Engine Family Name*	KCEXL03.3BAA
Manufacturer	Cummins	*Operator ID*	G 574
Model Year	2019	*Fuel Type*	CARB Diesel - ULSD
Model	4BT3.3-G5		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note	Building 574 - Public Safety (Fire & Police Station)		
Device Description	Tier 3 E/S DICE. Turbocharged/aftercooled		

51 Building 585, Pump Station Bldg., D-5

51.1 E/S Diesel Engine

Device ID #	114036	*Maximum Rated BHP*	742.00
Device Name	E/S Diesel Engine	*Serial Number*	81Z16822
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Caterpillar	*Operator ID*	
Model Year	1999	*Fuel Type*	CARB Diesel - ULSD
Model	3412		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: D-5, Physical Sciences, Building 557 ::		
Device Description	Emergency engine provides power for the Main Water Pump Station.		

52 Building 588, Student Health, D-1

52.1 B1

Device ID #	**114127**	***Device Name***	**B1**
Rated Heat Input	2.160 MMBtu/Hour	*Operator ID*	B1
		Serial Number	55378
Manufacturer	Parker	*Rule 361 Status*	Existing
Model	T2160		
Location Note	Added note: D-1, Student Health Center, Building 588 :: building 588		
Emission Control Basis	Uncontrolled		
Device Description	natural draft on/off mode		

52.2 Boiler B2

Device ID #	**393200**	***Device Name***	**Boiler B2**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B2
		Serial Number	63576
Manufacturer	Parker Boilers		
Model	G-2304RL	*Stacked Unit?*	Yes
Location Note	Building 588 - Student Health Center		
Emission Control Basis	R360		
Device Description	Low-NOx burner, induced draft hot water boiler, stacked with Device #114127. Equipped with a shared Roots 3M175 rotary fuel meter.		

52.3 E/S Diesel Generator

Device ID #	388960	*Maximum Rated BHP*	315.00
Device Name	E/S Diesel Generator	*Serial Number*	45500344
Engine Use	Electrical Power	*EPA Engine Family Name*	GPKXL07.0PW1
Manufacturer	Caterpillar	*Operator ID*	G 588
Model Year	2016	*Fuel Type*	CARB Diesel - ULSD
Model	D200-2		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note	Student Health Building 588		
Device Description	Tier 3, 315 bhp diesel-fired, turbocharged, aftercooled backup generator		

53 Building 615, Materials Research Laboratory (MRL), D-5

53.1 Hot-Water Boiler #1

Device ID #	**393446**	***Device Name***	**Hot-Water Boiler #1**
Rated Heat Input	2.500 MMBtu/Hour	*Operator ID*	B1
		Serial Number	64026
Manufacturer	Parker Boilers	*Rule 361 Status*	New/Mod
Model	204L-G2640R(L)		
Location Note			
Emission Control Basis	R361		
Device Description	Forced draft hot water boiler, equipped with a Low-NOx burner. Unit de-rated by manufacturer to 2.500 MMBtu/hr from 2.640 MMBtu/hr using a preprogrammed Variable Frequency Drive to control fan speed and maximum inlet gas flow.		

53.2 E/S Diesel Engine

Device ID #	114035	*Maximum Rated BHP*	380.00
Device Name	E/S Diesel Engine	*Serial Number*	34810589
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Cummins	*Operator ID*	
Model Year	1996	*Fuel Type*	CARB Diesel - ULSD
Model	LTA-10G1		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: D-5, Materials Research Laboratory, Building 615 ::		
Device Description	Emergency engine provides power for the Materials Research Laboratory.		

54 Building 657, Physical Science Bldg. No. (PSBN), D-5

54.1 Hot-Water Boiler

Device ID #	**394662**	***Device Name***	**Hot-Water Boiler**
Rated Heat Input	3.900 MMBtu/Hour	*Operator ID*	B1
		Serial Number	604767400002
Manufacturer	Cleaver Brooks	*Rule 361 Status*	New/Mod
Model	CFCE-4000		
Location Note	Building 657		
Emission Control Basis	R361		
Device Description	Forced draft, full modulation hot water boiler, equipped with a Low-NOx burner and a pressure/temperature corrected fuel meter. Replaces two existing units in building 657 and 557. Operates in a stacked configuration with DID# 386829 and a heat recovery system to provide heat service for building 657 and 557.		

54.2 Boiler B-2

Device ID #	**386829**	***Device Name***	**Boiler B-2**
Rated Heat Input	2.000 MMBtu/Hour	*Operator ID*	B-2
		Serial Number	23080055095
Manufacturer	Parker		
Model	TC 600 (L)	*Stacked Unit?*	Yes
Location Note			
Emission Control Basis	NA		
Device Description			

54.3 E/S Diesel Engine

Device ID #	114034	*Maximum Rated BHP*	890.00
Device Name	E/S Diesel Engine	*Serial Number*	81Z13042
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Caterpillar	*Operator ID*	
Model Year	1995	*Fuel Type*	CARB Diesel - ULSD
Model	3412		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: D-5, Physical Sciences, Building 557 ::		
Device Description	Emergency engine provides power for the Physical Sciences Building - North.		

55 Building 860, Santa Catalina Residence Hall

55.1 E/S Diesel Engine

Device ID #	114060	*Maximum Rated BHP*	367.00
Device Name	E/S Diesel Engine	*Serial Number*	6D24-334394
Engine Use	Electrical Power	*EPA Engine Family Name*	
Manufacturer	Mitsubishi	*Operator ID*	
Model Year	2000	*Fuel Type*	CARB Diesel - ULSD
Model	W31066D240PT-GN01(000)		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	20
Location Note	Added note: Off, Santa Catalina Residence Hall, Building 860 ::		
Device Description	Emergency engine provides power for the Francisco Torres Building.		

55.2 Firewater Pump Engine

Device ID #	114029	*Maximum Rated BHP*	130.00
Device Name	Firewater Pump Engine	*Serial Number*	44729276
Engine Use	Fire Water Pump	*EPA Engine Family Name*	
Manufacturer	Cummins	*Operator ID*	
Model Year	1992	*Fuel Type*	CARB Diesel - ULSD
Model	6BTA5.9-F2		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note	Added note: Off, Santa Catalina Residence Hall, Building 860 ::		
Device Description	Firewater pump serves the building sprinkler system.		

55.3 Boiler 1

Device ID #	**393008**	***Device Name***	**Boiler 1**
Rated Heat Input	1.500 MMBtu/Hour	*Operator ID*	B1
		Serial Number	63446
Manufacturer	Parker		
Model	G-1536RL	*Stacked Unit?*	Yes
Location Note	Building 860		
Emission Control Basis	BACT		
Device Description	- Natural Draft - Full Modulation - Natural Gas - Equipped with a BACT Low-NOx burner, achieves 12 ppmv NOx @3% O2 -Stacked with two identical units, shared Temperature and pressure corrected fuel meter.		

55.4 Boiler 2

Device ID #	**393011**	***Device Name***	**Boiler 2**
Rated Heat Input	1.500 MMBtu/Hour	*Operator ID*	B2
		Serial Number	63451
Manufacturer	Parker		
Model	G-1536RL	*Stacked Unit?*	Yes
Location Note	Building 860		
Emission Control Basis	BACT		
Device Description	- Natural Draft - Full Modulation - Natural Gas - Equipped with a BACT Low-NOx burner, achieves 12 ppmv NOx @3% O2 -Stacked with two identical units, shared Temperature and pressure corrected fuel meter.		

55.5 Boiler 3

Device ID #	**393012**	***Device Name***	**Boiler 3**
Rated Heat Input	1.500 MMBtu/Hour	*Operator ID*	B3
		Serial Number	63449
Manufacturer	Parker		
Model	G-1536RL	*Stacked Unit?*	Yes
Location Note	Building 860		
Emission Control Basis	BACT		
Device Description	- Natural Draft - Full Modulation - Natural Gas - Equipped with a BACT Low-NOx burner, achieves 12 ppmv NOx @3% O2 -Stacked with two identical units, shared Temperature and pressure corrected fuel meter.		

56 Paint Shop Warehouse, B-2

56.1 Automotive Type Spray Booth

Device ID #	**114068**	***Device Name***	**Automotive Type Spray Booth**
Rated Heat Input		*Physical Size*	1.50 Horsepower (Electric Motor)
Manufacturer	Custom Made	*Operator ID*	
Model	n/a	*Serial Number*	n/a
Location Note	Added note: B-2, Paint Shop Warehouse, Building::		
Device Description	Three-sided, 10.5’ l x 8.0’ w x 7.0’ h		

56.2 High Transfer Efficiency Coating Application Equipment

Device ID #	**114069**	***Device Name***	**High Transfer Efficiency Coating Application Equipment**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	Added note: B-2, Paint Shop Warehouse, Building::		
Device Description			

57 Building 1861, Portola Dinning Commons

57.1 E/S Diesel Generator

Device ID #	388928	*Maximum Rated BHP*	284.00
Device Name	E/S Diesel Generator	*Serial Number*	PE6068L993343
Engine Use	Electrical Power	*EPA Engine Family Name*	FJDXL06.8120
Manufacturer	John Deere	*Operator ID*	G 1861
Model Year	2016	*Fuel Type*	
Model	6068HFG82		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note			
Device Description	Turbocharged		

58 Coating Operations

Device ID #	**387790**	***Device Name***	**Coating Operations**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Coating Operations at various locations around UCSB. 2.91 lb/day ROC emissions limit. Includes emissions fro the Spray Booth.		

59 Portable E/S Diesel Water Pump

Device ID #	388929	*Maximum Rated BHP*	113.00
Device Name	Portable E/S Diesel Water Pump	*Serial Number*	PE4045T539451
Engine Use	Pumping Flood Water	*EPA Engine Family Name*	5JDXL06.8082
Manufacturer	John Deere	*Operator ID*	Portable Water Pump
Model Year	2005	*Fuel Type*	CARB Diesel - ULSD
Model	4045TF275		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	30
Location Note			
Device Description	New device: 388929		

B DE-PERMITTED EQUIPMENT

1 Water Heater 1

Device ID #	**114109**	***Device Name***	**Water Heater 1**
Rated Heat Input	3.000 MMBtu/Hour	*Physical Size*	
Manufacturer	Parker	*Operator ID*	B1
Model	WH3000	*Serial Number*	54242
Depermitted Device Description	natural draft high/low fire mode	*Facility Transfer*	

2 Lochinvar Boiler #2

Device ID #	**114249**	***Device Name***	**Lochinvar Boiler #2**
Rated Heat Input	1.500 MMBtu/Hour	*Physical Size*	
Manufacturer	Lochinvar	*Operator ID*	B5
Model	SBN1500	*Serial Number*	F11H00233897
Depermitted Device Description	- Dresser Roots Shared Rotary Fuel Meter - Forced Draft - Full Modulation - Natural Gas	*Facility Transfer*	

3 Lochinvar Boiler #3

Device ID #	**387546**	***Device Name***	**Lochinvar Boiler #3**
Rated Heat Input	1.500 MMBtu/Hour	*Physical Size*	
Manufacturer	Lochinvar	*Operator ID*	Boiler #4
Model	SBN1500	*Serial Number*	L13H00258034
Depermitted Device Description	Replacement hot water boiler. - Dresser Roots Shared Rotary Fuel Meter - Forced Draft - Full Modulation - Natural Gas	*Facility Transfer*	

4 Lochinvar Boiler #6

Device ID #	**391529**	***Device Name***	**Lochinvar Boiler #6**
Rated Heat Input	1.500 MMBtu/Hour	*Physical Size*	
Manufacturer	Lochinvar	*Operator ID*	Boiler #6
Model	FBN1501	*Serial Number*	1710105194847
Depermitted		*Facility Transfer*	
Device Description	- Dresser Roots Shared Rotary Fuel Meter - Model 5M175 temperature and pressure corrected - Forced Draft - Full Modulation - Natural Gas Replacement unit for Device #114250		

5 Boiler B-1

Device ID #	**114712**	***Device Name***	**Boiler B-1**
Rated Heat Input	1.300 MMBtu/Hour	*Physical Size*	1.30 MMBtu/Hour
Manufacturer	Lochinvar	*Operator ID*	B-1
Model	SBN1300	*Serial Number*	F12H00241667
Depermitted		*Facility Transfer*	
Device Description	Stacked hot water boiler. Fired on PUC gas. Modulated burner with a 10:1 turndown ratio.		

6 Boiler B-2

Device ID #	**114713**	***Device Name***	**Boiler B-2**
Rated Heat Input	1.300 MMBtu/Hour	*Physical Size*	1.30 MMBtu/Hour
Manufacturer	Lochinvar	*Operator ID*	B-2
Model	SBN1300	*Serial Number*	F12H00241030
Depermitted		*Facility Transfer*	
Device Description	Stacked hot water boiler. Fired on PUC gas. Modulated burner with a 10:1 turndown ratio.		

Attachment 10.2. External Combustion Equipment Operational Requirements

Building	Make	Model	Rule	Tune-Ups	Fuel Use Monitor	Low Use	Source Test	NOx ppmvd @3% O_2	CO ppmvd @3% O_2	Basis	Installed
Bldg. 221	Raypac	H9-2072A	361	Biannual	Fuel Meter	Yes	No	--	--	--	2006
Bldg. 225	Parker	G2304RL	360	Annual	Fuel Meter	No	No	20	400	SCAQMD	2016
Bldg. 225	Parker	G2304RL	360	Annual	Fuel Meter	No	No	20	400	SCAQMD	2016
Bldg. 225	Parker	G2304RL	360	Annual	Fuel Meter	No	No	20	400	SCAQMD	2016
Bldg. 235	Lochinvar	FBN2001	360	Annual	Fuel Meter	No	No	20	400	Rule 360	2020
Bldg. 235	Parker	G2304RL	360	Annual	Fuel Meter	No	No	20	400	Rule 360	2019
Bldg. 266	Parker	G2304RL	360	Annual	Fuel Meter	No	No	30	400	Rule 360	2018
Bldg. 266	Parker	G2304RL	360	Annual	Fuel Meter	No	No	30	400	Rule 360	2018
Bldg. 266	Rite	325WG	361	Biannual	Fuel Meter	Yes	No	--	--	--	2005
Bldg. 276	Parker	WH2270L	361	Biannual	Fuel Meter	No	No	30	400	Rule 361	2008
Bldg. 276	Parker	WH2270L	361	Biannual	Fuel Meter	No	No	30	400	Rule 361	2008
Bldg. 479	Parker	WH3000L	361	Biannual	Default	No	No	30	400	Rule 361	2002
Bldg. 479	Parker	WH3000L	361	Biannual	Default	No	No	30	400	Rule 361	2002
Bldg. 503	Parker	T1460LR	360	Annual	Default	No	No	20	400	SCAQMD	2016
Bldg. 503	Lochinvar	SBN1500m7	360	Annual	Fuel Meter	No	No	20	400	SCAQMD	2012
Bldg. 503	Lochinvar	SBN1500m7	360	Annual	Fuel Meter	No	No	20	400	SCAQMD	2012
Bldg. 503	Lochinvar	SBN1500m7	360	Annual	Fuel Meter	No	No	20	400	SCAQMD	2012
Bldg. 503	Lochinvar	SBN1500m7	360	Annual	Fuel Meter	No	No	20	400	SCAQMD	2012
Bldg. 503	Lochinvar	SBN1500m7	360	Annual	Fuel Meter	No	No	20	400	SCAQMD	2012
Bldg. 503	Lochinvar	SBN1500m7	360	Annual	Fuel Meter	No	No	20	400	SCAQMD	2012

Building	Make	Model	Rule	Tune-Ups	Fuel Use Monitor	Low Use	Source Test	NOx ppmvd @3% O_2	CO ppmvd @3% O_2	Basis	Installed
Bldg. 505	Parker	G-1536RL	360	Annual	Fuel Meter	No	No	20	400	Rule 360	2019
Bldg. 505	Parker	G-1536RL	360	Annual	Fuel Meter	No	No	20	400	Rule 360	2019
Bldg. 512	Camus	AVNH4000	361	Biannual	Fuel Meter	No	Initial and Upon District Request Thereafter	9	100	BACT	2019
Bldg. 512	Camus	AVNH4000	361	Biannual	Fuel Meter	No	Initial and Upon District Request Thereafter	9	100	BACT	2019
Bldg. 512	Fulton	ISC-9.5	360	Annual	Fuel Meter	No	No	20	50	BACT	2016
Bldg. 512	Fulton	ISC-9.5	360	Annual	Fuel Meter	No	No	20	50	BACT	2016
Bldg. 512	Fulton	ISC-9.5	360	Annual	Fuel Meter	No	No	20	50	BACT	2016
Bldg. 512	Fulton	ISC-9.5	360	Annual	Fuel Meter	No	No	20	50	BACT	2016
Bldg. 512	Fulton	ISC-9.5	360	Annual	Fuel Meter	No	No	20	50	BACT	2016
Bldg. 512	Fulton	ISC-9.5	360	Annual	Fuel Meter	No	No	20	50	BACT	2016
Bldg. 512	Fulton	ISC-9.5	360	Annual	Fuel Meter	No	No	20	50	BACT	2016
Bldg. 512	Fulton	ISC-9.5	360	Annual	Fuel Meter	No	No	20	50	BACT	2016
Bldg. 515	Bryan	AB250	361	Biannual	Fuel Meter	Yes	No	--	--	--	1995
Bldg. 515	Bryan	AB250	361	Biannual	Fuel Meter	Yes	No	--	--	--	1995
Bldg. 515	Bryan	AB250	361	Biannual	Fuel Meter	Yes	No	--	--	--	1995
Bldg. 516	Cleaver Brooks	CFCE700-2000-125HW	360	Annual	Fuel Meter	No	No	20	400	Rule 360	2019
Bldg. 516	Cleaver Brooks	CFCE700-2000-125HW	360	Annual	Fuel Meter	No	No	20	400	Rule 360	2019
Bldg. 516	Cleaver Brooks	CFCE700-2000-125HW	360	Annual	Fuel Meter	No	No	20	400	Rule 360	2019
Bldg. 520	Parker	T4600LR	361	Biannual	Default	No	No	30	400	Rule 361	2003
Bldg. 521	Parker	T2970LR	361	Biannual	Default	No	No	30	400	Rule 361	2001
Bldg. 525	Parker	G2304RL	360	Annual	Default	No	No	20	400	Rule 360	2019

Building	Make	Model	Rule	Tune-Ups	Fuel Use Monitor	Low Use	Source Test	NOx ppmvd @3% O_2	CO ppmvd @3% O_2	Basis	Installed
Bldg. 525	Parker	G2304RL	360	Annual	Default	No	No	20	400	Rule 360	2019
Bldg. 526	Parker	WH1410	360	No	Default	No	No	--	--	--	2002
Bldg. 526	Parker	WH1410	360	No	Default	No	No	--	--	--	2002
Bldg. 528	Parker	G2304RL	360	No	Fuel Meter	No	No	30	400	Rule 360	2018
Bldg. 528	Bryan	AB150-W-FDG-LX	360	No	Fuel Meter	No	No	--	--	--	2014
Bldg. 533	Parker	WH1900	360	No	Default	No	No	--	--	--	2001
Bldg. 533	Parker	WH1900	360	No	Default	No	No	--	--	--	2001
Bldg. 533	Parker	WH1900	360	No	Default	No	No	--	--	--	2001
Bldg. 533	Parker	WH1900	360	No	Default	No	No	--	--	--	2001
Bldg. 534	Parker	T-2970LR	361	Biannual	Fuel Meter	No	No	30	400	Rule 361	2013
Bldg. 534	Parker	T-2970LR	361	Biannual	Fuel Meter	No	No	30	400	Rule 361	2013
Bldg. 534	Parker	G2640RL	361	Biannual	Fuel Meter	No	No	30	400	Rule 361	2019
Bldg. 535	Parker	WH3000	361	Biannual	Fuel Meter	Yes	No	--	--	--	2002
Bldg. 542	Lochinvar	SBN1300	360	Annual	Fuel Meter	No	No	30	400	Rule 360	2012
Bldg. 542	Lochinvar	SBN1300	360	Annual	Fuel Meter	No	No	30	400	Rule 360	2012
Bldg. 544	Parker	T2600L	361	Biannual	Default	No	No	30	400	Rule 361	2007
Bldg. 544	Parker	T2600L	361	Biannual	Default	No	No	30	400	Rule 361	2007
Bldg. 549	Parker	105L-70	361	Biannual	Default	No	No	30	400	Rule 361	2019
Bldg. 549	Parker	105L-70	361	Biannual	Default	No	No	30	400	Rule 361	2019
Bldg. 551	Parker	G2304RL	360	Annual	Fuel Meter	No	No	20	400	Rule 360	2019
Bldg. 551	Parker	G2304RL	360	Annual	Fuel Meter	No	No	20	400	Rule 360	2019

Building	Make	Model	Rule	Tune-Ups	Fuel Use Monitor	Low Use	Source Test	NOx ppmvd @3% O_2	CO ppmvd @3% O_2	Basis	Installed
Bldg. 552	Parker	G-1536RL	360	Annual	Default	No	Initial and Upon District Request Thereafter	12	100	BACT	2019
Bldg. 552	Parker	G-1536RL	360	Annual	Default	No	Initial and Upon District Request Thereafter	12	100	BACT	2019
Bldg. 553	Parker	204L-G2304RL	360	Annual	Fuel Meter	No	No	20	400	Rule 360	2019
Bldg. 553	Parker	204L-G2304RL	360	Annual	Fuel Meter	No	No	20	400	Rule 360	2019
Bldg. 554	Parker	G2304RL	360	Annual	Default	No	No	20	400	Rule 360	2019
Bldg. 554	Parker	G2304RL	360	Annual	Default	No	No	20	400	Rule 360	2019
Bldg. 558	Cleaver Brooks	CFC-E2000	360	Annual	Fuel Meter	No	No	20	400	Rule 360	2019
Bldg. 558	Cleaver Brooks	CFC-E2000	360	Annual	Fuel Meter	No	No	20	400	Rule 360	2019
Bldg 560	Bryan	AB150-W-FDG-LX	360	No	Fuel Meter	No	No	--	--	--	2013
Bldg. 560	Parker	G3120RL	361	Biannual	Fuel Meter	No	No	30	400	Rule 361	2019
Bldg. 561	Raypac	H9-15323B	360	Annual	Default	No	No	30	400	Rule 360	2007
Bldg. 561	Raypac	H9-15323B	360	Annual	Default	No	No	30	400	Rule 360	2007
Bldg. 562	Lochinvar	FBN1501	360	Annual	Fuel Meter	No	No	20	400	BACT	2017
Bldg. 562	Parker	104-40L	360	Annual	Fuel Meter	No	No	30	400	Rule 360	2011
Bldg. 562	Parker	104-40L	360	Annual	Fuel Meter	No	No	30	400	Rule 360	2011
Bldg. 562	Cleaver Brooks	CFC-E-700-1500-125HW	360	Annual	Fuel Meter	No	No	12	100	BACT	2022
Bldg. 562	Cleaver Brooks	CFC-E-700-1500-125HW	360	Annual	Fuel Meter	No	No	12	100	BACT	2022
Bldg. 563	Parker	T-4600	361	Biannual	Fuel Meter	Yes	No	--	--	--	2001
Bldg. 563	Parker	T-4600	361	Biannual	Fuel Meter	Yes	No	--	--	--	2001
Bldg. 564	Bryan	CL210W	361	Biannual	Fuel Meter	Yes	No	--	--	--	1986
Bldg. 571	Parker	G2304R(L)	360	Annual	Fuel Meter	No	No	20	100	SCAQMD	2011

Building	Make	Model	Rule	Tune-Ups	Fuel Use Monitor	Low Use	Source Test	NOx ppmvd @3% O_2	CO ppmvd @3% O_2	Basis	Installed
Bldg. 571	Parker	G2304R(L)	360	Annual	Fuel Meter	No	No	20	100	SCAQMD	2011
Bldg. 571	Parker	G2304R(L)	360	Annual	Fuel Meter	No	No	20	100	SCAQMD	2011
Bldg. 571	Parker	G2304R(L)	360	Annual	Fuel Meter	No	No	20	100	SCAQMD	2011
Bldg. 588	Parker	T2160	361	Biannual	Fuel Meter	Yes	No	--	--	--	1987
Bldg. 588	Parker	G2304RL	360	Annual	Fuel Meter	No	No	30	400	Rule 360	2018
Bldg. 615	Parker	G2304R(L)	361	Biannual	Fuel Meter	No	No	30	400	Rule 361	2019
Bldg. 657	Cleaver Brooks	CFCE-4000	361	Biannual	Fuel Meter	No	No	30	400	Rule 361	2019
Bldg. 657	Parker	TC 600(L)	360	Annual	Fuel Meter	No	No	20	400	SCAQMD	2014
Bldg. 860	Parker	G-1536RL	360	Annual	Default	No	Initial and Upon District Request Thereafter	12	100	BACT	2018
Bldg. 860	Parker	G-1536RL	360	Annual	Default	No	Initial and Upon District Request Thereafter	12	100	BACT	2018
Bldg. 860	Parker	G-1536RL	360	Annual	Default	No	Initial and Upon District Request Thereafter	12	100	BACT	2018

Attachment 10.3. Internal Combustion Equipment Operational Requirements

Building	Operator ID	Device ID	Fuel Type	Make	Model	Rating (bhp)	Engine Use	Hrs/Day	Hrs/Yr	Installed
Bldg. 205	Emer. Generator	114058	Diesel	Caterpillar	3208	299	Emer. Gen.	2	20	2000
Bldg. 221	Emer. Generator	114030	Diesel	Cummins	QSM11-G2	470	Emer. Gen.	2	50	2005
Bldg. 225	Emer. Generator	114057	Diesel	Cummins	06T30-G5-NRI	1490	Emer. Gen.	2	20	2002
Bldg. 226	Emer. Generator	393553	Diesel	Caterpillar	C7.1	281	Emer. Gen.	2	50	2020
Bldg. 235	Emer. Generator	114056	Diesel	Volvo	TAD1631GE	768	Emer. Gen.	2	20	2004
Bldg. 250	Emer. Generator	114055	Diesel	John Deere	6059TF002	152	Emer. Gen.	2	20	1998
Bldg. 266	Emer. Generator	114054	Diesel	Caterpillar	3512	2172	Emer. Gen.	2	20	2004
Bldg. 276	Emer. Generator	114071	Diesel	Caterpillar	C9	398	Emer. Gen.	2	50	2007
Bldg. 503	Emer. Generator	114134	Diesel	Caterpillar	c15	798	Emer. Gen.	2	50	2009
Bldg. 506	Emer. Generator	395544	Diesel	Caterpillar	C4.4	161	Emer. Gen.	2	40	2022
Bldg. 511	Emer. Generator	114052	Diesel	Cummins	6BTA5.9-G4	170	Emer. Gen.	2	20	1994
Bldg. 512	Emer. Generator	388947	Diesel	Mitsubishi	S12R-Y2PTAW-1	1881	Emer. Gen.	2	50	2016
Bldg. 515	Emer. Generator	114051	Diesel	Det. Diesel	12V71TA	750	Emer. Gen.	2	20	1995
Bldg. 516	Emer. Generator	114050	Diesel	Cummins	4B3.9-G	68	Emer. Gen.	2	20	2004
Bldg. 520	Emer. Generator	114049	Diesel	Cummins	QSX15-G9	755	Emer. Gen.	2	20	2003
Bldg. 521	Emer. Generator	114048	Diesel	Cummins	NTA-855-G3	535	Emer. Gen.	2	20	2001

Building	Operator ID	Device ID	Fuel Type	Make	Model	Rating (bhp)	Engine Use	Hrs/Day	Hrs/Yr	Installed
Bldg. 525	Emer. Generator	386852	Diesel	Caterpillar	C15	762	Emer. Gen.	2	50	2014
Bldg. 526	Emer. Generator	393041	Diesel	Caterpillar	C4.4	96	Emer. Gen.	2	50	2018
Bldg. 529	Emer. Generator	393551	Diesel	Cummins	QSB7	324	Emer. Gen.	2	50	2019
Bldg. 529	Emer. Generator	393552	Diesel	Cummins	QSB7	324	Emer. Gen.	2	50	2019
Bldg. 531	Emer. Generator	394710	Diesel	Cummins	4BT3.3-G5	69	Emer. Gen.	2	50	2020
Bldg. 535	Emer. Generator	114139	Diesel	Cummins	QSX15-G9 NR2	755	Emer. Gen.	2	50	2011
Bldg. 542	Emer. Generator	114059	Diesel	Generac	70874	56	Emer. Gen.	2	20	1999
Bldg. 544	Emer. Generator	114047	Diesel	Caterpillar	3306	382	Emer. Gen.	2	20	2001
Bldg. 549	Emer. Generator	114046	Diesel	Mitsubishi	OD5703	292	Emer. Gen.	2	20	2004
Bldg. 551	Emer. Generator	114045	Diesel	Caterpillar	3208	263	Emer. Gen.	2	20	1995
Bldg. 553	Emer. Generator	114064	Diesel	John Deere	5030TF270	64	Emer. Gen.	2	50	2005
Bldg. 554	Emer. Generator	394712	Diesel	Cummins	4BT3.3-G5	69	Emer. Gen.	2	50	2020
Bldg. 555	Emer. Generator	114033	Diesel	Cummins	NT-855-G2	355	Emer. Gen.	2	20	1988
Bldg. 556	Emer. Generator	114044	Diesel	Cummins	6CTA-8.3-G	277	Emer. Gen.	2	20	1989
Bldg. 557	Emer. Generator	114043	Diesel	Caterpillar	3406	519	Emer. Gen.	2	20	1996
Bldg. 558	Emer. Generator	114130	Diesel	Perkins	C4.4 ACERT 3362/1800	157	Emer. Gen.	2	50	2008
Bldg. 561	Emer. Generator	114070	Diesel	John Deere	5030TF270 / SD040	64	Emer. Gen.	2	50	2006

Building	Operator ID	Device ID	Fuel Type	Make	Model	Rating (bhp)	Engine Use	Hrs/Day	Hrs/Yr	Installed
Bldg. 562	Emer. Generator	114038	Diesel	Caterpillar	92461	207	Emer. Gen.	2	20	2001
Bldg. 565	Emer. Generator	114042	Diesel	Cummins	NT-855-G4	375	Emer. Gen.	2	20	1995
Bldg. 568	Emer. Generator	114041	Diesel	Caterpillar	3056	166	Emer. Gen.	2	20	1995
Bldg. 571	Emer. Generator	114040	Diesel	Caterpillar	3412	749	Emer. Gen.	2	20	1999
Bldg. 572	Emer. Generator	114039	Diesel	Cummins	Q5X15-G9	755	Emer. Gen.	2	20	2001
Bldg. 574	Emer. Generator	394714	Diesel	Cummins	4BT3.3-G5	69	Emer. Gen.	2	50	2020
Bldg. 574	Emer. Generator	114037	Diesel	Caterpillar	3208	299	Emer. Gen.	2	20	1993
Bldg. 585	Emer. Generator	114036	Diesel	Caterpillar	3412	742	Emer. Gen.	2	20	1994
Bldg. 588	Emer. Generator	388960	Diesel	Caterpillar	D200-2	315	Emer. Gen.	2	50	2016
Bldg. 615	Emer. Generator	114035	Diesel	Cummins	LTA10G1	380	Emer. Gen.	2	20	1996
Bldg. 657	Emer. Generator	114034	Diesel	Caterpillar	3412DI	890	Emer. Gen.	2	20	1995
Bldg. 860	Emer. F/W Pump	114029	Diesel	Cummins	6BTA5.9-F2	130	F/W Pump	NA	NA	1992
Bldg. 860	Emer. Generator	114060	Diesel	Mitsubishi	W31066D240PT-GN01(000)	367	Emer. Gen.	2	20	2000
Bldg. 1861	Emer. Generator	388928	Diesel	John Deere	6068HFG82	284	Emer. Gen.	2	50	2016
Portable	Emer. Water Pump	388929	Diesel	John Deere	4045TF275	113	Emer. Pump	2	30	2005

Attachment 10.4. Vapor Recovery System Testing Requirements

Annual testing required. The permittee shall conduct and successfully pass Static Leak Decay testing once per year (at least 350 days between tests, but not to exceed 410 days between tests). Routine testing shall consist of at least one compliance test per year according to the test protocols outlined in Exhibit 4 of Executive Order VR-401-C. The test listed above, and any other VRS specific tests required in the applicable Executive Orders, are required to be performed by the permittee. At any time, the District may require the permittee to perform any applicable ARB Test Procedure if operational VRS problems are observed. The permittee shall document all failures by detailing the cause(s) and corrective action(s) taken to eliminate the failure(s) on District Form ENF-99.

All Static Leak Decay tests are subject to the following requirements: (a) during the test the tank ullage shall meet the requirements specified in TP-201.3 - Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities; (b) no fuel drops shall occur within 3 hours prior to the test; (c) no other Static Leak Tests shall occur within 24 hours prior to the test.

Compliance test results (including initial failures) shall be documented by using SBCAPCD or ARB approved reporting forms[1] (as applicable). Document all failures by detailing the cause(s) and corrective action(s) taken to eliminate the failure(s). "Successfully passing" a test means that all test results indicate compliance initially, without replacing, adjusting or repairing any equipment, part or item of the VRS. Example: If initial testing indicates a failure, and the equipment is adjusted, retested, and then passes, this is considered a failed test and shall be noted as such in the repair records and reporting forms.

Components and/or systems failing the any required test shall not be used to dispense or receive gasoline, unless the permittee contacts the District via email at enfr@sbcapcd.org to obtain Rule 505 "Breakdown" protection for the failed equipment for 24 hours. Components unable to be repaired within 24 hours must be removed from service unless a variance is obtained from the District Hearing Board. All failed equipment shall be tagged as "out of order" until repaired.

Attachment 10.5. Vapor Recovery System Facility Repair Log and Testing Records

The permittee shall maintain a Facility Repair Log and maintain the results of all VRS Testing Records in a folder or filing system separate from other regulatory agency documents and as noted below:

1. **Facility Repair Log**: A Repair Log that includes the information below. District Form ENF –99 shall be used. An alternative log form may be used if approved, in advance, by the District.

    - Date and time the problem was detected (e.g., component malfunction, defect, ISD Warning alarm, ISD Failure alarm, reconnection of breakaways)
    - Date and time the component was removed from service
    - Date and time the call for service was placed (including calls for service due to an ISD Warning alarm or ISD Failure alarm)
    - Date of actual service for which the component or defect was repaired or replaced (indicate if the ISD Failure alarm was "cleared")
    - Name of the person performing the service and telephone number
    - Affiliation (company name) of the person performing the service
    - Indicate whether the service call was due to an ISD Warning alarm or ISD Failure alarm
    - Provide a short description of the service performed and list each component repaired, serviced, or removed, (include the component(s) manufacturer's (or re-manufacturer's) name and model number
    - Receipts for parts used in the repair and, if applicable, work orders, which shall include the name and signature of the person responsible for performing the repairs shall be made available to the District upon request
    - Any other information specifically required by the applicable Executive Orders

2. **Testing Records**: Records of all Compliance Tests, and any other VRS specific tests required in the applicable Executive Orders that include:

    - The date and start time of each test;
    - The type of test (specify ARB TP number);
    - Name(s), employer (or affiliation), address and phone number of the person(s) performing the tests;
    - Test data and calibration data for all equipment used;
    - Date and time each test is completed and the facility owner/operator is notified of the test results. For a test that fails, a description of the reason(s) for the test failure shall also be included; and
    - For a retest following a failed test, a description of the repairs performed prior to the retest (or a cross-reference to the Facility Repair Log above).
    - Completed CARB or District-approved reporting forms[1.]

Attachment 10.6. Health Risk Assessment Calculations

Device #388928 - 284 bhp diesel engine provides electrical backup power to the Portola Dining Commons (Building 1861):

Health Risk Assessment Report

University of California – Santa Barbara Portola Dining Commons

1.0 SUMMARY

In May 2016, the Santa Barbara County Air Pollution Control District (District) conducted a screening health risk assessment for the installation of a new emergency standby diesel engine at UCSB's Portola Dining Commons in Isla Vista using Lakes AERSCREEN View Version 2.0.0, for Authority to Construct No. 14783. The District performed a public notice for this project because it is located within 1000 feet of Isla Vista Elementary School. In response to public comments, the District conducted a refined air toxics Health Risk Assessment (HRA) for the project in July 2016, using the Hotspots Analysis and Reporting Program (HARP) software, Version 2 (Build 16088). Cancer risk and chronic and acute non-cancer Hazard Index (HI) risk values were calculated and compared to significance thresholds for cancer and chronic and acute non-cancer risk adopted by the District's Board of Directors. The calculated risk values and applicable thresholds are as follows:

	UCSB Portola Max Risks	Significance Threshold
Cancer risk:	6.1/million	≥10/million
Chronic non-cancer risk:	< 0.1	>1
Chronic 8-hour non-cancer risk:	< 0.1	>1
Acute non-cancer risk:	0.3	>1

Based on these results, the proposed diesel engine will not pose a significant risk to the surrounding community. For this reason, Authority to Construct No. 14783 will be issued for this facility.

2.0 BACKGROUND

2.1 Facility Operations

UCSB is installing a new diesel-fired engine to provide electrical backup power to the Portola Dining Commons. The HRA also includes emissions from other major equipment in the Portola Dining Commons area: three existing boilers, two new boilers, and two existing diesel engines. A school notice is required because the facility is within 1000 feet of Isla Vista Elementary School.

2.2 Health Risk

As used in this report, the term "health risk" addresses the likelihood that exposure to a given toxic air contaminant under a given set of conditions will result in an adverse health effect. Health risk is affected by several factors, such as: the amount, toxicity, and concentration of the contaminant; the meteorological conditions; the distance from emission sources to people; the distance between emission sources; the age,

health, and lifestyle of the people living or working at a location; and, the duration of exposure to the toxic air contaminant.

Health effects are divided into cancer and non-cancer risks. "Cancer risk" refers to the increased chance of contracting cancer as a result of an exposure, and is expressed as a probability: chances-in-a-million. The values expressed for cancer risk do not predict actual cases of cancer that will result from exposure to toxic air contaminants. Rather, they state a possible risk of contracting cancer over and above the background level.

For non-cancer health effects, risk is characterized by a "Hazard Index" (HI), which is obtained by dividing the predicted concentration of a toxic air contaminant (TAC) by a Reference Exposure Level (REL) for that pollutant that has been determined by health professionals, the Office of Environmental Health Hazard Assessment (OEHHA) and the California Air Resources Board (ARB). RELs are used as indicators of the potential adverse effects of chemicals. A REL is the concentration at or below which no adverse health effects are anticipated for specific exposure duration. Thus, the HI is a measure of the exposure relative to a level of safety and is appropriately protective of public health. Each TAC emitted by the facility has a different emission rate and a different REL. A HI for each TAC is calculated separately at each modeled receptor location. A composite HI at each receptor is then calculated as the sum of HIs for each individual TAC. The maximum HI reported here for each scenario is the maximum composite HI among all receptors.

2.3 May 2016 Screening Health Risk Assessment

In May 2016, the District conducted a screening health risk assessment for the new diesel-fired emergency standby generator using Lakes AERSCREEN View Version 2.0.0. The screening tool is a more simplistic approach to risk assessment and is designed to be conservative. The screening HRA only included emissions from the proposed diesel generator. Additional information on the May 2016 screening HRA can be found in the folder in the Attachments section of this report. The calculated risk values and applicable thresholds were as follows:

	UCSB Portola Max Risks	Significance Threshold
Cancer risk:	3.36/million	≥10/million
Chronic non-cancer risk:	0.010	>1
Acute non-cancer risk:	0.001	>1

The District received comments concerned about the cumulative impacts from other emitting sources at UCSB. For that reason, the District prepared a refined HRA for the UCSB Portola Dining Commons. The refined HRA includes emissions from major emitting devices in the Portola Dining Commons area, including the proposed diesel generator.

3.0 FACILITY INFORMATION

EQUIPMENT OWNER/OPERATOR: University of California – Santa Barbara

SOURCE IDENTIFICATION NUMBER: 02795

EQUIPMENT LOCATION: 6850 El Colegio Rd, Isla Vista

FACILITY UTM COORDINATES: UCSB provided UTM coordinates for the emitting devices modeled in this HRA. The District estimated the buildings and property boundary UTM coordinates from Google Earth and a site plan submitted by UCSB.

UTM Zone 10, Datum: NAD 83
Easting: 787888.4 m, Northing: 3812955.6 m

EQUIPMENT DESCRIPTION: The HRA addresses emissions from three existing natural gas-fired boilers, two new natural gas-fired boilers, two existing diesel generators and the proposed new diesel generator.

4.0 STACKS AND MODELING PARAMETERS

The source release parameter inputs to the dispersion model are outlined in Table 4.1. All UTM coordinates in this report are in Zone 10 and the datum is NAD83. The source parameters for the existing boilers (Source ID 1) were obtained from the permit application for the equipment, but the stack height and UTM coordinates were adjusted so that the stack is located on top of the Portola Dining Commons building (as described in the boilers' permit application for ATC-PTO 13879). The source parameters for the existing diesel engines (Source IDs 2 and 3) were obtained from UCSB's most recent AB 2588 HRA for Inventory Year 2008. The source parameters for the new diesel engine (Source ID 4) were obtained from the permit application for ATC 14783. The parameters for the two new boilers (Source ID 5) were obtained from an email correspondence with UCSB's Environmental Compliance Manager, Jodi Woods. This information may be found in the *UCSB Portola HRA.zip* file referenced in the Attachments section of this report.

Table 4.1 – Summary of Stack Parameter Inputs

Source ID	Source Type	UTME (m)	UTMN (m)	Release Height (ft)	Temp. (°F)	Stack Vel (ft/min)	Stack Dia (in)
1	Point	787833.8	3812926.1	9.84	205	1750	6.00
2	Point	787867.4	3812920.8	9.00	660	14000	8.00
3	Capped Point	787856.0	3812923.9	11.00	834	10400	6.00
4	Point	787978.1	3812970.0	5.82	901	13000	3.86
5	Point	787953.6	3812944.8	38.0	300	350	8.00

5.0 EMISSIONS

The facility's calculated annual and hourly emissions are shown in Table 5.1. The average annual emissions are based on actual equipment usage for existing equipment and maximum potential-to-emit for new equipment. The maximum hourly emissions are based on all equipment operating at full load for an hour.

Table 5.1 – UCSB Portola Dining Commons Emissions Summary

Pollutant	Average Annual Emissions (lb/yr)	Maximum Hourly Emissions (lb/hr)
Benzene	4.75E-02	8.33E-03
Formaldehyde	1.01E-01	7.68E-02
PAHs	2.38E-03	2.49E-03
PAHs (w/o naphth)	5.94E-04	1.61E-03
Naphthalene	1.78E-03	8.78E-04
Acetaldehyde	2.55E-02	3.49E-02
Acrolein	1.60E-02	1.52E-03
1,3-butadiene	--	9.67E-03
Chlorobenzene	--	8.89E-06
Propylene	4.34E+00	2.46E-02
Toluene	2.17E-01	4.88E-03
Xylenes	1.62E-01	2.03E-03
Ethyl Benzene	5.64E-02	5.34E-04
Hexane	3.74E-02	1.23E-03
Hydrochloric acid	--	8.28E-03
Arsenic	1.19E-03	7.22E-05
Barium	2.61E-02	2.29E-05
Beryllium	7.13E-05	6.23E-08
Cadmium	6.54E-03	7.24E-05
Chromium	8.32E-03	3.40E-05
Chromium 6+	--	4.45E-06
Cobalt	4.99E-04	4.36E-07
Copper	5.05E-03	1.87E-04
Lead	--	3.69E-04
Manganese	2.26E-03	1.40E-04
Mercury	1.54E-03	9.03E-05
Molybdenum	6.54E-03	5.71E-06
Nickel	1.25E-02	1.84E-04
Selenium	1.43E-04	9.79E-05
Vanadium	1.37E-02	1.19E-05
Zinc	1.72E-01	1.15E-03
Diesel PM	1.18E+01	4.96E-01

The emissions for the five boilers were calculated based on the manufacturer's specified maximum heat inputs for the equipment and the default heating value of 1020 Btu/scf. Emission factors for organic toxic pollutants were obtained from the Ventura County APCD's *AB 2588 Combustion Emission Factors* for natural gas-fired external combustion equipment rated less than 10 MMBtu/hr. Metal emissions were calculated using the USEPA's AP-42 Table 1.4-4, *Emission Factors for Metals from Natural Gas Combustion*. The hourly emissions are based on the boilers operating at full load for an hour. The annual emissions for the three existing boilers are based on the actual combined usage of 1109.01 MMBtu from the most recent annual report for 2014. Because the two new boilers are used for kitchen operations, the annual emissions are based on operation at full load for the entire time the kitchen is open (5AM to 10PM every day).

The emissions for the three diesel engines were calculated based on the Ventura County APCD's *AB 2588 Combustion Emission Factors* for diesel-fired internal combustion engines. The PM emission factors come from each engine's permit. The fuel usage for each engine was calculated using the manufacturer's specified maximum horsepower rating and the default brake-specific fuel consumption and high heating values for diesel engines from the District's *Piston IC Engine Technical Reference Document*. The hourly emissions are based on the diesel engines operating at full load for an hour. The annual emissions for the two existing engines are based on the actual usages from the most recent annual report for 2014. The engine corresponding to Source ID 2 was used for 13.3 hours, and the engine corresponding to Source ID 3 was used for 9.8 hours for maintenance and testing in 2014. The annual emissions for the new diesel engine are based on the maximum permitted maintenance & testing hours: 50 hours per year.

6.0 BUILDING INFORMATION

The UTM coordinates for the existing buildings were submitted by UCSB in their AB 2588 HRA for Inventory Year 2008. The coordinates for these buildings were adjusted using Google Earth. The height of one of the buildings, the Portola Dining Commons, was changed to 3 meters, the average height of a one-story building. Many new buildings are being constructed around the Portola Dining Commons area; the UTM coordinates for these buildings were obtained using Google Earth and a site plan submitted by UCSB. All of the new building heights were submitted by UCSB. Lakes AERMOD View was used to determine which of the surrounding buildings would have building downwash effects on the sources that were modeled. The building information was included in the HRA and may be found under *UCSB_Portola_Buildings.xlsx* located in the *UCSB Portola HRA.zip* file.

7.0 MET DATA & DEM FILES

Meteorological data used in the air dispersion analyses were acquired at the Santa Barbara Airport from 2010-2014. These files, *SBA10-14.PFL* and *SBA10-14.SFC*, were processed by the District using AERMET version 14134 and can be found in the *UCSB Portola HRA.zip* file. The Digital Elevation Model (DEM) files used were *Goleta.dem* and *Dos_Pueblos_Canyon.dem*, which are also located in the .zip file.

8.0 MODEL INFORMATION

The dispersion modeling and risk assessment were conducted using the California Air Resources Board Hotspots Analysis and Reporting Program, Version 2 (Build 16088). The regulatory non-default Control option was selected to enable capped stack releases. The rural option was enabled. Variable emissions were used for the two new boilers (Source ID 5) that operate from 5AM to 10PM every day. The

receptors were placed 20 meters apart in a 1400-meter by 1400-meter grid around the facility. Boundary receptors were generated along the property boundary 10 meters apart. All receptors had a flagpole height of 1.5 meters. Grid and receptor data may be found in *UCSB_PORTOLA_AERMAP.REC* located in the *UCSB Portola HRA.zip* file referenced in the Attachments section of this report.

The cancer risks for the residential receptors and the point of maximum impact (PMI) were determined using the "individual resident" receptor type, 30-year exposure duration, and the intake rate from the "RMP using the Derived Method." The chronic non-cancer hazard indices for the residential receptors and the PMI were determined using the "individual resident" receptor type and the intake rate from the "OEHHA Derived Method." The diesel engines are uncontrolled, but the only pollutant with chronic health impacts emitted by the diesel engines is diesel PM, which is not a multipathway pollutant. The only other sources of emissions are natural gas-fired boilers, which emit particulate matter less than 2.5 microns. Therefore, the deposition rate of 0.02 m/s was used for this analysis. The soil and mother's milk pathways were included, using default Tier 1 values. The dermal pathway was included, with a "Warm" climate. The homegrown produce, chicken and egg pathways were also included, using the default values for households that garden and raise/hunt chickens because there are no farms close to this project. The default fractions of contaminated animal food were used, shown in Table 3.4.9.1 and Table 3.4.9.2 of the District's *Modeling Guidelines for Health Risk Assessments,* Form-15i. The acute non-cancer hazard indices were calculated for all receptors. The multipathway analysis does not apply for acute non-cancer risk.

Isla Vista Elementary School was within the 1 in a million cancer risk isopleth after the initial HRA was ran without fraction of time at residence (FAH) values applied. Per OEHHA's guidelines, the risk was calculated again using the FAH values only for age bins equal to or greater than 16 years under the inhalation pathway for the residential receptors and the PMI for the cancer risk. FAH values do not apply for worker receptors or for any non-cancer risk calculations.

The cancer risks for the worker receptors were determined using the "worker" receptor type, 25-year exposure duration and the intake rate from the "OEHHA Derived Method." Although the diesel engines do not operate continuously, a worker adjustment factor was not applied because operation of the engines are not restricted to a certain time. The chronic non-cancer hazard indices for the worker receptors were determined using the "worker" receptor type and the intake rate from the "OEHHA Derived Method." The default values for the soil pathway and the default values for a "Warm" climate for the dermal pathway were selected for the worker cancer and chronic non-cancer risk analysis. Per OEHHA Guidelines, the chronic 8-hour non-cancer hazard indices were calculated only for worker receptors because operation of the diesel engines is not restricted to a certain time. The default 8-hour moderate intensity intake rate was chosen for the chronic 8-hour risk. The multipathway analysis does not apply for chronic 8-hour non-cancer risk.

9.0 RESULTS

Risk assessment results at the off-site point of maximum impact (PMI) and the maximally exposed individual resident (MEIR) and worker (MEIW) receptor locations for cancer and for chronic and acute non-cancer health effects are shown in Table 9.1. The *italicized* values indicate the maximum risk for each risk category. The chronic 8-hour non-cancer risk at the MEIW is 0.00012 at Receptor No. 2092 (UTME 787828.4, UTMN 3812836). The on-site PMI for acute non-cancer risk is 0.342 at Receptor No. 2596 (UTME 787968.4, UTMN 3812976).

Table 9.1 – Risk at PMI, MEIR and MEIW Receptors

Type of Receptor	Receptor Number	Cancer Risk (in a million)	Chronic Non-Cancer HI	Acute Non-Cancer HI (Screening)	UTME (m)	UTMN (m)
PMI	5111	*8.00*	0.0071	0.228	787813.9	3812904
PMI	5098	4.95	*0.0162*	0.158	787943.8	3812908
PMI	2318	1.79	0.0016	*0.261*	788088.4	3812896
MEIR	2092	6.06	0.0048	0.211	787828.4	3812836
MEIR	2161	5.85	0.0046	0.220	787788.4	3812856
MEIW	2092	0.63	0.0030	0.211	787828.4	3812836
MEIW	2161	0.61	0.0029	0.220	787788.4	3812856

The PMIs for cancer and chronic non-cancer risk are located on the property boundary on the south side of the facility. The off-site PMI for acute non-cancer risk is located on El Colegio Rd, southeast of the facility. The MEIRs and MEIWs are located on the north side of Isla Vista Elementary School. The residential cancer risk contours were plotted on aerial photographs using Google Earth for informational purposes (shown in Attachment A). The 10 in a million cancer risk isopleth does not leave the property boundary. The other risk contours were not plotted because none of the calculated risks were above the District's significance thresholds.

The screening acute risk is a timesaving approximation that is conservative in nature. It is calculated by assuming that the contribution of risk from each source is at its maximum at the same instant in time. If there is more than one source, the maximum hourly risk from each source is summed to give the screening value, as if they had all occurred at the same time. In reality, the time that the risk from each source is at a maximum will differ depending on location and meteorology. The refined analysis was not performed because the acute risk at the on-site PMI is below the significance threshold of 1.0.

10.0 CONCLUSION

Per District guidelines, if a facility's toxic emissions result in a cancer risk equal to or greater than 10 in a million, it is considered a *significant risk* facility. For non-cancer risk, if a facility's toxic emissions result in a Hazard Index greater than 1.0, it is considered a *significant risk* facility. The risk assessment results show that the addition of a new diesel-fired emergency standby engine would not present a significant risk to the surrounding community. For this reason, Authority to Construct No. 14783 may be granted for this facility.

11.0 REFERENCES

- Risk notification levels were adopted by the Santa Barbara County Air Pollution Control Board of Directors on June 1993. The risk notification levels were set at 10 per million for cancer risk and a Hazard Index of 1.0 for non-cancer risk.
- Risk reduction thresholds were adopted by the Santa Barbara County Air Pollution Control Board of Directors on September 17, 1998. These risk reduction thresholds were set at the same level as public notification thresholds, i.e., 10 per million for cancer risk and a Hazard Index of 1.0 for non-cancer risk.

- Office of Environmental Health Hazard Assessment. *Air Toxics Hot Spots Program: Risk Assessment Guidelines*. February 2015. California Environmental Protection Agency. http://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.
- Santa Barbara County Air Pollution Control District. *Modeling Guidelines for Health Risk Assessments*. August 2015. http://www.ourair.org/wp-content/uploads/apcd-15i.pdf.
- Santa Barbara County Air Pollution Control District. *Piston IC Engine Technical Reference Document*. November 2002. http://www.ourair.org/wp-content/uploads/sbcapcdicerefdoc.pdf.
- Ventura County Air Pollution Control District. *AB 2588 Natural Gas Combustion Emission Factors*. May 2001. http://www.vcapcd.org/pubs/Engineering/AirToxics/combem.pdf.
- USEPA. *Table 1.4-4. Emission Factors for Metals from Natural Gas Combustion*. July 1998. http://www.epa.gov/ttn/chief/ap42/ch01/final/c01s04.pdf.

12.0 ATTACHMENTS

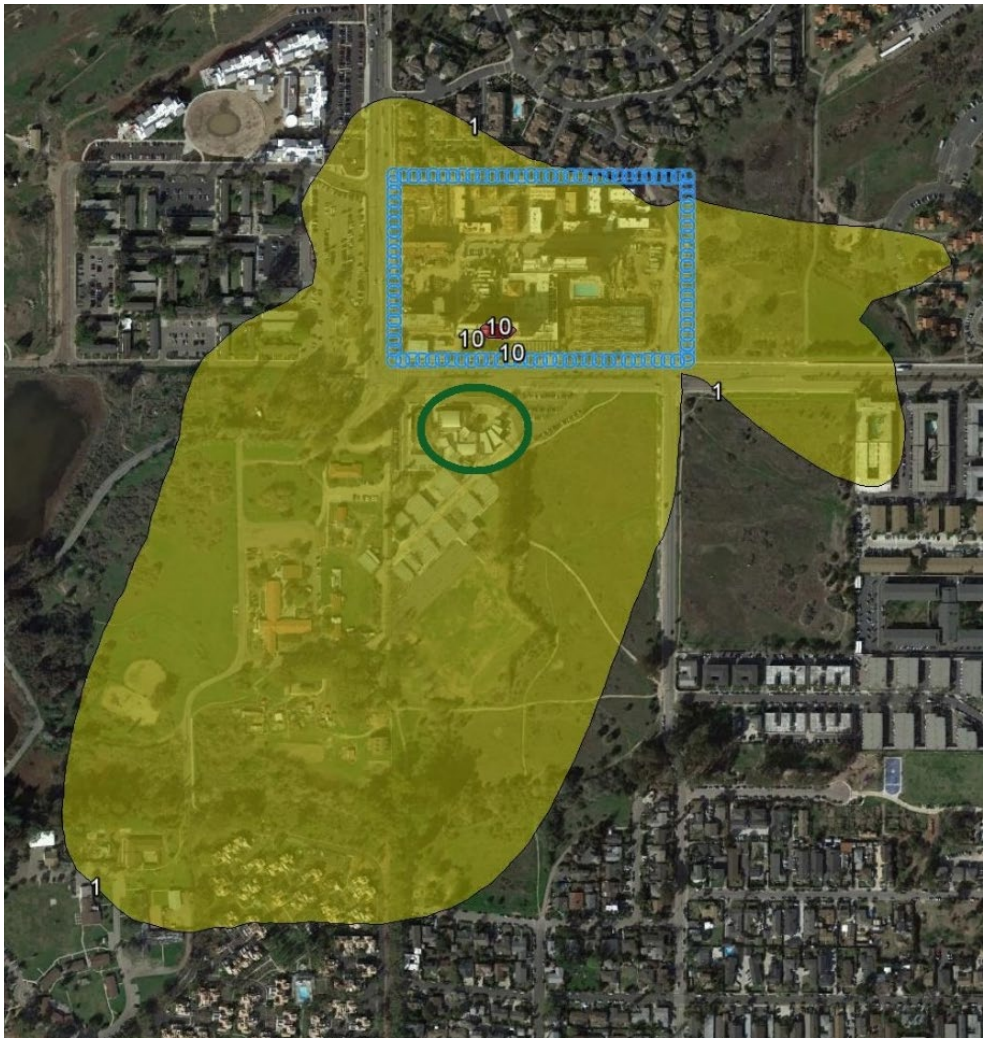
A – UCSB Portola Dining Commons: Residential Cancer Risk Isopleth

Source parameter data and HRA input and output files may be found in the following location: \\sbcapcd.org\shares\Toxics\SourceFiles\SSID02795UCSB\ATC 14783 Refined HRA\UCSB Portola HRA.zip.

Information on the May 2016 screening HRA may be found in the following location: \\sbcapcd.org\shares\Toxics\SourceFiles\SSID02795UCSB\ATC 14783 HRA Screening.

A – UCSB Portola Dining Commons

Residential Cancer Risk Isopleth



10 in a Million Cancer Risk Isopleth in Red
1 in a Million Cancer Risk Isopleth in Yellow
Property Boundary in Blue
Isla Vista Elementary School Circled in Green

Device #393041 – 96 bhp diesel engine providing electrical backup power to Webb Hall (Building 526):

1.0 SUMMARY

An air toxics Health Risk Assessment (HRA) screening was conducted by the Santa Barbara County Air Pollution Control District (District) for a proposed diesel-fired internal combustion engine (DICE) located at Webb Hall at UCSB. The proposed engine is a 96-bhp Model C4.4, manufactured by Caterpillar. The HRA screening was conducted using the District's DICE Screening Tool, which was developed using the USEPA-recommended screening model, AERSCREEN, and the Hotspots Analysis and Reporting Program (HARP) software, Version 2. Cancer risk and chronic non-cancer Hazard Index (HI) risk values were calculated and compared to *significance thresholds* for cancer and chronic non-cancer risk adopted by the District's Board of Directors. The calculated risk values and applicable thresholds are as follows:

	Webb Hall DICE Max Risks	Significance Threshold
Cancer risk:	0.5/million	≥10/million
Chronic non-cancer risk:	<0.1	>1

Based on these results, the proposed DICE at Webb Hall does not present a significant risk to the surrounding community. For this reason, Authority to Construct No. 15147 was issued for this project.

2.0 MODELING INFORMATION

The inputs to the DICE Screening Tool are shown in Figure 2.1 below.

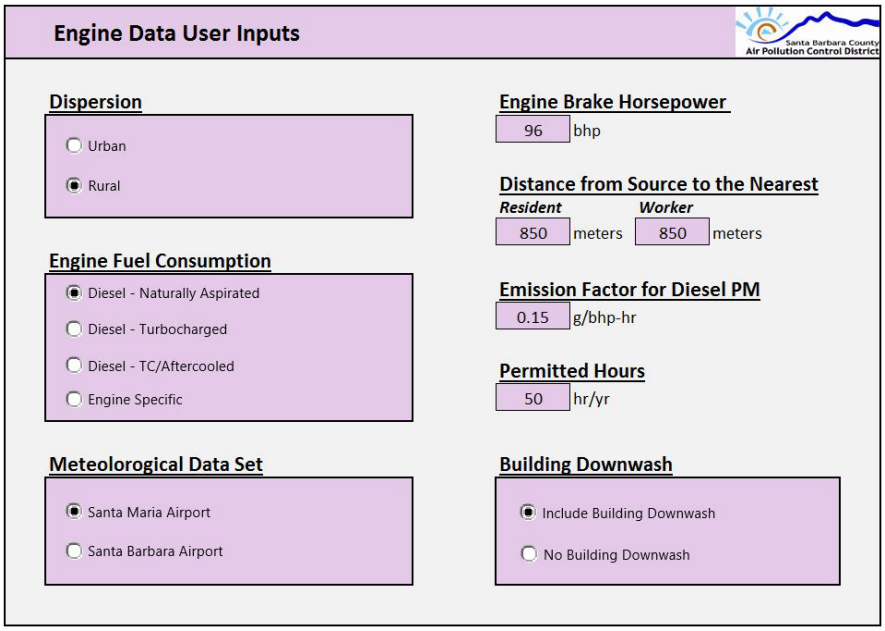


Figure 2.1 – User Inputs to DICE Screening Tool

3.0 EMISSIONS

The calculated emissions for this DICE are shown in Table 3.1. The maximum permitted usage of 50 hours per year for maintenance and testing purposes, maximum rated brake horsepower of 96 bhp for this engine, and the ARB's *Airborne Toxic Control Measure for Stationary Compression Ignition Engines* particulate matter (PM) emission standard of 0.15 g/bhp-hr were used to calculate the annual emissions of diesel PM.

Table 3.1 –Facility Emissions Summary

Pollutant	Emissions (lb/yr)
Diesel PM	1.587

4.0 RESULTS

The cancer and chronic non-cancer risks are higher at the maximally exposed individual resident (MEIR) than at the maximally exposed individual worker (MEIW). Table 4.1 displays the cancer and chronic non-cancer risks at the MEIR. All of the calculated risk values are below the District's significance thresholds.

Table 4.1 – Summary of Screening Model Results

Pollutant	C_{annual} at MEIR ($\mu g/m^3$)	Cancer Risk (per million)	Chronic Non-Cancer Risk (Hazard Index)
Diesel PM	0.00068	**0.51**	**0.0001**

5.0 REFERENCES

- Risk notification levels were adopted by the Santa Barbara County Air Pollution Control Board of Directors on June 1993. The risk notification levels were set at 10 per million for cancer risk and a Hazard Index of greater than 1.0 for non-cancer risk.
- Air Resources Board. May 2011. "Final Regulation Order: Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines." https://www.arb.ca.gov/diesel/documents/FinalReg2011.pdf.
- Office of Environmental Health Hazard Assessment. February 2015. "Air Toxics Hot Spots Program: Risk Assessment Guidelines." California Environmental Protection Agency. http://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.
- Santa Barbara County Air Pollution Control District. August 2015. "Modeling Guidelines for Health Risk Assessments." http://www.ourair.org/wp-content/uploads/apcd-15i.pdf.

6.0 ATTACHMENT

The DICE Screening Tool spreadsheet for this permit may be found in the following location: \\sbcapcd.org\shares\Toxics\SourceFiles\SSID02795UCSB\ATC 15147 HRA Screening

Devices #393551 and #393552 – two 324 bhp diesel engines providing electrical backup power to the Sewage Lift Station (Building 529):

1.0 SUMMARY

An air toxics Health Risk Assessment (HRA) screening was conducted by the Santa Barbara County Air Pollution Control District (District) for two proposed diesel-fired internal combustion engines (DICEs) located at the Building 529 Sewage Lift Station at the University of California – Santa Barbara (UCSB). The proposed engines are both 324-bhp Model QSB7, manufactured by Cummins. The HRA screening was conducted using the District's DICE Screening Tool, which was developed using the USEPA-recommended screening model, AERSCREEN, and the Hotspots Analysis and Reporting Program (HARP) software, Version 2. Cancer risk and chronic non-cancer Hazard Index (HI) risk values were calculated and compared to *significance thresholds* for cancer and chronic non-cancer risk adopted by the District's Board of Directors. The calculated risk values and applicable thresholds are as follows:

	UCSB Bldg 529 DICE Max Risks	Significance Threshold
Cancer risk:	0.8/million	≥10/million
Chronic non-cancer risk:	<0.1	>1

Based on these results, the two proposed DICEs at UCSB do not present a significant risk to the surrounding community. For this reason, Authority to Construct No. 15369 was issued for this project.

2.0 MODELING INFORMATION

The inputs to the DICE Screening Tool are shown in Figure 2.1 below. Because the two engines are identical, one spreadsheet was used to calculate the total risks from both engines. The total annual usage for both engines (for maintenance and testing purposes) of 100 hours/year was entered to account for the total emissions from both engines.

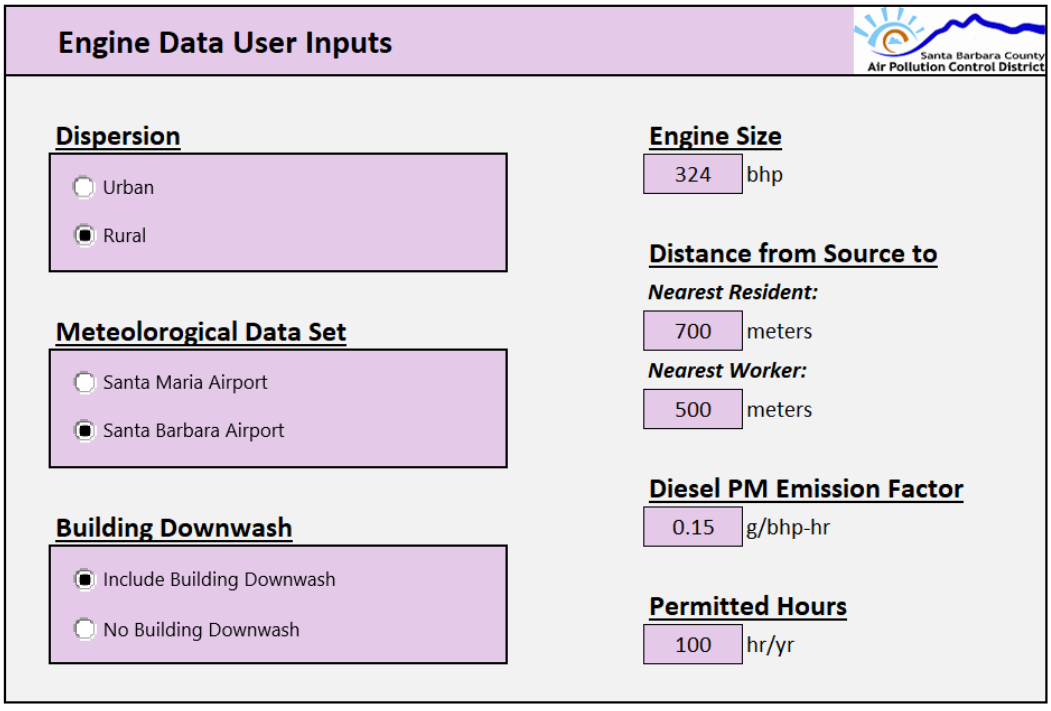


Figure 2.1 – User Inputs to DICE Screening Tool

3.0 EMISSIONS

The total calculated emissions for both engines are shown in Table 3.1. The maximum permitted usage of 50 hours per year for maintenance and testing purposes, maximum rated brake horsepower of 324 bhp, and CARB's *Final Regulation Order: Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines* particulate matter (PM) emission standard of 0.15 g/bhp-hr were used to calculate the annual emissions of diesel PM for each engine.

Table 3.1 – Facility Emissions Summary

Pollutant	Emissions (lb/yr)
Diesel PM	10.7

4.0 RESULTS

The cancer and chronic non-cancer risks are higher at the maximally exposed individual worker (MEIW) than at the maximally exposed individual resident (MEIR). Table 4.1 displays the cancer and chronic non-cancer risk results at the MEIW. All of the calculated risk values are below the District's significance thresholds.

Table 4.1 – Summary of Screening Tool Results

Pollutant	C_{annual} at MEIW ($\mu g/m^3$)	Cancer Risk (per million)	Chronic Non-Cancer Risk (Hazard Index)
Diesel PM	0.0135	**0.83**	**0.003**

5.0 REFERENCES

- Risk notification levels were adopted by the Santa Barbara County Air Pollution Control Board of Directors on June 1993. The risk notification levels were set at 10 per million for cancer risk and a Hazard Index of greater than 1.0 for non-cancer risk.
- California Air Resources Board. May 2011. *Final Regulation Order: Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines*. https://www.arb.ca.gov/diesel/documents/FinalReg2011.pdf.
- Office of Environmental Health Hazard Assessment. February 2015. *Air Toxics Hot Spots Program: Risk Assessment Guidelines*. California Environmental Protection Agency. http://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.
- Santa Barbara County Air Pollution Control District. February 2019. *Modeling Guidelines for Health Risk Assessments*. http://www.ourair.org/wp-content/uploads/apcd-15i.pdf.
- Santa Barbara County Air Pollution Control District. 2019. *DICE Health Risk Assessment Screening Tool*. https://www.ourair.org/dice-health-risk-assessment-screening-tool/.

6.0 ATTACHMENT

The DICE Screening Tool spreadsheet for this permit may be found in the following location: \\sbcapcd.org\shares\Toxics\SourceFiles\SSID02795UCSB\ATC 15369 HRA Screening

Device #393553 – 281 bhp diesel engine providing electrical backup power to Henley Hall (Building 226):

1.0 SUMMARY

This Health Risk Assessment was conducted as part of ATC 15374 assuming a maximum rating of 315 bhp. After installation, the device was determined to have a maximum rating of 281 bhp. The District determined a new Health Risk Assessment was not required as the assessed risk represents a worst-case scenario. An air toxics Health Risk Assessment (HRA) screening was conducted by the Santa Barbara County Air Pollution Control District (District) for the proposed diesel-fired internal combustion engine (DICE) located at Henley Hall at the University of California – Santa Barbara (UCSB). The proposed engine is a 315-bhp Model C7.1, manufactured by Caterpillar. The HRA screening was conducted using the District's DICE Screening Tool, which was developed using the USEPA-recommended screening model, AERSCREEN, and the Hotspots Analysis and Reporting Program (HARP) software, Version 2. Cancer risk and chronic non-cancer Hazard Index (HI) risk values were calculated and compared to *significance thresholds* for cancer and chronic non-cancer risk adopted by the District's Board of Directors. The calculated risk values and applicable thresholds are as follows:

	UCSB Henley Hall DICE Max Risks	Significance Threshold
Cancer risk:	3.3/million	≥10/million
Chronic non-cancer risk:	<0.1	>1

Based on these results, the proposed DICE at Henley Hall in UCSB does not present a significant risk to the surrounding community. For this reason, Authority to Construct No. 15374 will be issued for this project.

2.0 MODELING INFORMATION

The inputs to the DICE Screening Tool are shown in Figure 2.1 below. The total annual usage (for maintenance and testing purposes) of 50 hours/year was entered to account for the total emissions from the engine.

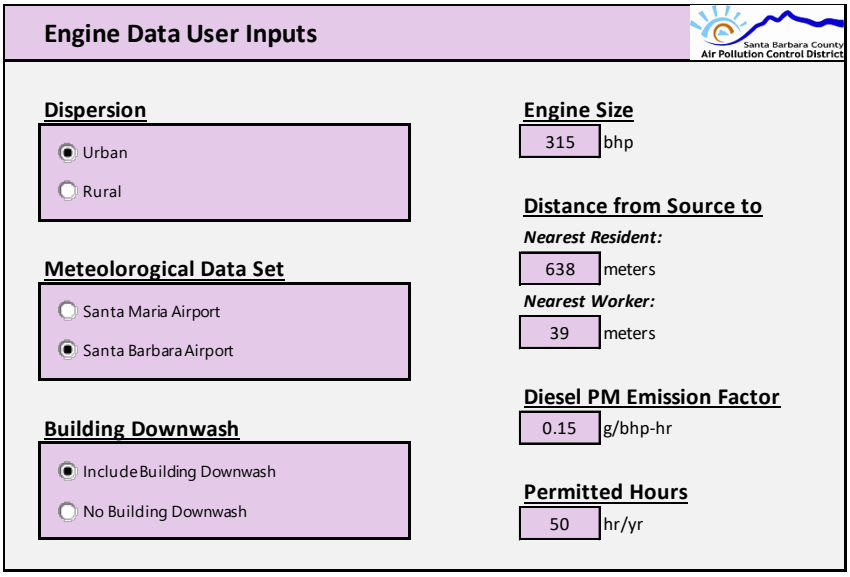


Figure 2.1 – User Inputs to DICE Screening Tool

3.0 EMISSIONS

The total calculated emissions for the engine is shown in Table 3.1. The maximum permitted usage of 50 hours per year for maintenance and testing purposes, maximum rated brake horsepower of 315 bhp, and CARB's *Final Regulation Order: Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines* particulate matter (PM) emission standard of 0.15 g/bhp-hr were used to calculate the annual emissions of diesel PM for the engine.

Table 3.1 – Facility Emissions Summary

Pollutant	Emissions (lb/yr)
Diesel PM	5.21

4.0 RESULTS

The cancer and chronic non-cancer risks are higher at the maximally exposed individual worker (MEIW) than at the maximally exposed individual resident (MEIR). Table 4.1 displays the cancer and chronic non-cancer risk results at the MEIW. All of the calculated risk values are below the District's significance thresholds.

Table 4.1 – Summary of Screening Tool Results

Pollutant	C_{annual} at MEIW ($\mu g/m^3$)	Cancer Risk (per million)	Chronic Non-Cancer Risk (Hazard Index)
Diesel PM	0.05301	**3.28**	**0.0106**

5.0 REFERENCES

- Risk notification levels were adopted by the Santa Barbara County Air Pollution Control Board of Directors on June 1993. The risk notification levels were set at 10 per million for cancer risk and a Hazard Index of greater than 1.0 for non-cancer risk.
- California Air Resources Board. May 2011. *Final Regulation Order: Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines*. https://www.arb.ca.gov/diesel/documents/FinalReg2011.pdf.
- Office of Environmental Health Hazard Assessment. February 2015. *Air Toxics Hot Spots Program: Risk Assessment Guidelines*. California Environmental Protection Agency. http://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.
- Santa Barbara County Air Pollution Control District. February 2019. *Modeling Guidelines for Health Risk Assessments*. http://www.ourair.org/wp-content/uploads/apcd-15i.pdf.
- Santa Barbara County Air Pollution Control District. 2019. *DICE Health Risk Assessment Screening Tool*. https://www.ourair.org/dice-health-risk-assessment-screening-tool/.

Device #394710 – 69 bhp diesel engine providing electrical backup power to the Music and Lotte Lehmann Concert Hall Building (Building 531):

1.0 SUMMARY

An air toxics Health Risk Assessment (HRA) screening was conducted by the Santa Barbara County Air Pollution Control District (District) for a proposed diesel-fired internal combustion engine (DICE) located at Building 531, Music and Lotte Lehmann Concert Hall at UCSB. The proposed engine is a 69-bhp Model 4BT3.3-G5, manufactured by Cummins. The HRA screening was conducted using the District's DICE Screening Tool, which was developed using the USEPA-recommended screening model, AERSCREEN, and the Hotspots Analysis and Reporting Program (HARP) software, Version 2. Cancer risk and chronic non-cancer Hazard Index (HI) risk values were calculated and compared to *significance thresholds* for cancer and chronic non-cancer risk adopted by the District's Board of Directors. The calculated risk values and applicable thresholds are as follows:

	UCSB Bldg 531 DICE Max Risks	Significance Threshold
Cancer risk:	0.8/million	≥10/million
Chronic non-cancer risk:	<0.1	>1

Based on these results, the proposed DICE at UCSB does not present a significant risk to the surrounding community. For this reason, Authority to Construct No. 15404 will be issued for this project.

2.0 MODELING INFORMATION

The inputs to the DICE Screening Tool are shown in Figure 2.1 below.

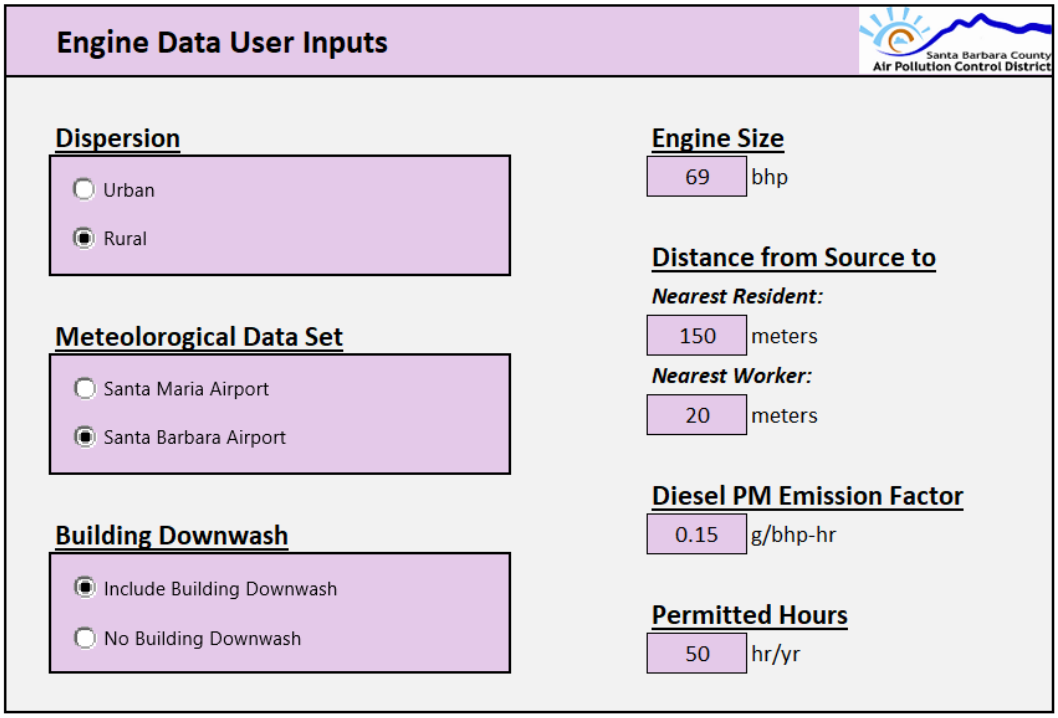


Figure 2.1 – User Inputs to DICE Screening Tool

3.0 EMISSIONS

The calculated emissions for this DICE are shown in Table 3.1. The maximum permitted usage of 50 hours per year for maintenance and testing purposes, maximum rated brake horsepower of 69 bhp for this engine, and CARB's *Final Regulation Order: Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines* particulate matter (PM) emission standard of 0.15 g/bhp-hr were used to calculate the annual emissions of diesel PM.

Table 3.1 – Facility Emissions Summary

Pollutant	Emissions (lb/yr)
Diesel PM	1.14

4.0 RESULTS

The cancer risk is higher at the maximally exposed individual resident (MEIR) than at the maximally exposed individual worker (MEIW), and the chronic non-cancer risk is higher at the MEIW than at the MEIR. Table 4.1 displays the cancer risk at the MEIR and the chronic non-cancer risk at the MEIW. All of the calculated risk values are below the District's significance thresholds.

Table 4.1 – Summary of Screening Tool Results

Pollutant	C_{annual} at MEIR ($\mu g/m^3$)	C_{annual} at MEIW ($\mu g/m^3$)	Cancer Risk (per million)	Chronic Non-Cancer Risk (Hazard Index)
Diesel PM	0.00105	0.0105	**0.80**	**0.002**

5.0 REFERENCES

- Risk notification levels were adopted by the Santa Barbara County Air Pollution Control Board of Directors on June 1993. The risk notification levels were set at 10 per million for cancer risk and a Hazard Index of greater than 1.0 for non-cancer risk.
- California Air Resources Board. May 2011. *Final Regulation Order: Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines*. https://www.arb.ca.gov/diesel/documents/FinalReg2011.pdf.
- Office of Environmental Health Hazard Assessment. February 2015. *Air Toxics Hot Spots Program: Risk Assessment Guidelines*. California Environmental Protection Agency. http://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.
- Santa Barbara County Air Pollution Control District. July 2019. *Modeling Guidelines for Health Risk Assessments*. http://www.ourair.org/wp-content/uploads/apcd-15i.pdf.
- Santa Barbara County Air Pollution Control District. 2019. *DICE Health Risk Assessment Screening Tool*. https://www.ourair.org/dice-health-risk-assessment-screening-tool/.

6.0 ATTACHMENT

The DICE Screening Tool spreadsheet for this permit may be found in the following location: \\sbcapcd.org\shares\Toxics\SourceFiles\SSID02795UCSB\ATC 15404 HRA Screening

Device #394712 – 69 bhp diesel engine providing electrical backup power to Theater and Dance East & Hatlen Theater Building (Building 554):

1.0 SUMMARY

An air toxics Health Risk Assessment (HRA) screening was conducted by the Santa Barbara County Air Pollution Control District (District) for a proposed diesel-fired internal combustion engine (DICE) located at Building 554, Theater and Dance East & Hatlen Theater at UCSB. The proposed engine is a 69-bhp Model 4BT3.3-G5, manufactured by Cummins. The HRA screening was conducted using the District's DICE Screening Tool, which was developed using the USEPA-recommended screening model, AERSCREEN, and the Hotspots Analysis and Reporting Program (HARP) software, Version 2. Cancer risk and chronic non-cancer Hazard Index (HI) risk values were calculated and compared to *significance thresholds* for cancer and chronic non-cancer risk adopted by the District's Board of Directors. The calculated risk values and applicable thresholds are as follows:

	UCSB Bldg 554 DICE Max Risks	Significance Threshold
Cancer risk:	0.6/million	≥10/million
Chronic non-cancer risk:	<0.1	>1

Based on these results, the proposed DICE at UCSB does not present a significant risk to the surrounding community. For this reason, Authority to Construct No. 15405 will be issued for this project.

2.0 MODELING INFORMATION

The inputs to the DICE Screening Tool are shown in Figure 2.1 below.

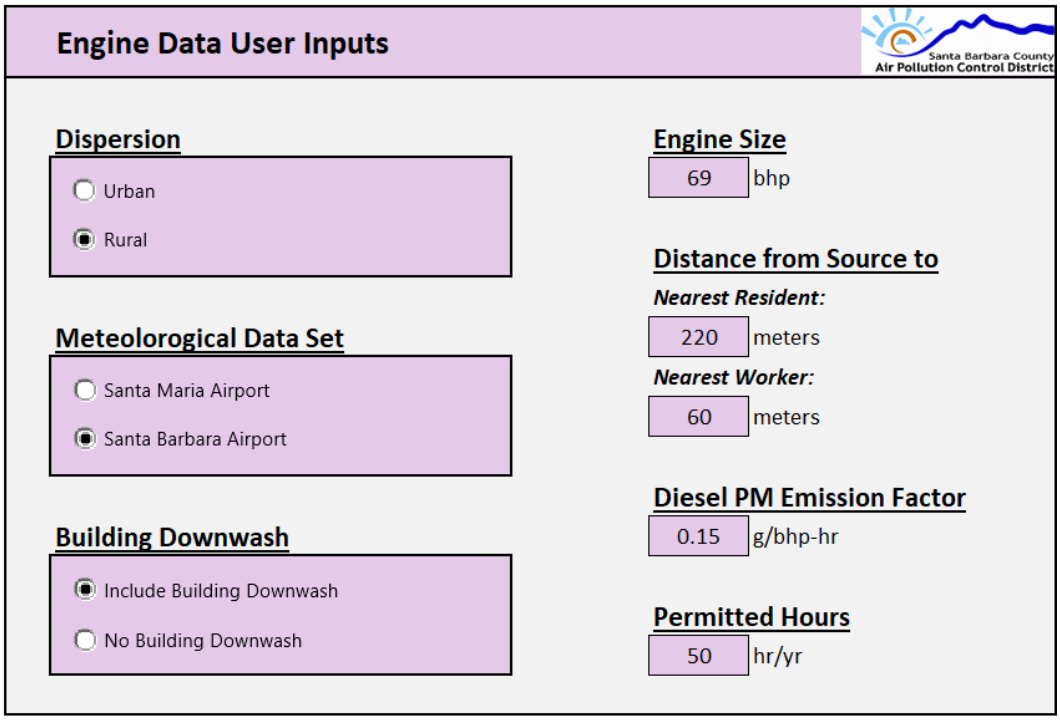


Figure 2.1 – User Inputs to DICE Screening Tool

3.0 EMISSIONS

The calculated emissions for this DICE are shown in Table 3.1. The maximum permitted usage of 50 hours per year for maintenance and testing purposes, maximum rated brake horsepower of 69 bhp for this engine, and CARB's *Final Regulation Order: Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines* particulate matter (PM) emission standard of 0.15 g/bhp-hr were used to calculate the annual emissions of diesel PM.

Table 3.1 – Facility Emissions Summary

Pollutant	Emissions (lb/yr)
Diesel PM	1.14

4.0 RESULTS

The cancer risk is higher at the maximally exposed individual resident (MEIR) than at the maximally exposed individual worker (MEIW), and the chronic non-cancer risk is higher at the MEIW than at the MEIR. Table 4.1 displays the cancer risk at the MEIR and the chronic non-cancer risk at the MEIW. All of the calculated risk values are below the District's significance thresholds.

Table 4.1 – Summary of Screening Tool Results

Pollutant	C_{annual} at MEIR ($\mu g/m^3$)	C_{annual} at MEIW ($\mu g/m^3$)	Cancer Risk (per million)	Chronic Non-Cancer Risk (Hazard Index)
Diesel PM	0.00080	0.00592	**0.61**	**0.001**

5.0 REFERENCES

- Risk notification levels were adopted by the Santa Barbara County Air Pollution Control Board of Directors on June 1993. The risk notification levels were set at 10 per million for cancer risk and a Hazard Index of greater than 1.0 for non-cancer risk.
- California Air Resources Board. May 2011. *Final Regulation Order: Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines*. https://www.arb.ca.gov/diesel/documents/FinalReg2011.pdf.
- Office of Environmental Health Hazard Assessment. February 2015. *Air Toxics Hot Spots Program: Risk Assessment Guidelines*. California Environmental Protection Agency. http://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.
- Santa Barbara County Air Pollution Control District. July 2019. *Modeling Guidelines for Health Risk Assessments*. http://www.ourair.org/wp-content/uploads/apcd-15i.pdf.
- Santa Barbara County Air Pollution Control District. 2019. *DICE Health Risk Assessment Screening Tool*. https://www.ourair.org/dice-health-risk-assessment-screening-tool/.

6.0 ATTACHMENT

The DICE Screening Tool spreadsheet for this permit may be found in the following location: \\sbcapcd.org\shares\Toxics\SourceFiles\SSID02795UCSB\ATC 15405 HRA Screening

Device #394714 – 69 bhp diesel engine providing electrical backup power to the Public Safety Building (Building 574):

1.0 SUMMARY

An air toxics Health Risk Assessment (HRA) screening was conducted by the Santa Barbara County Air Pollution Control District (District) for a proposed diesel-fired internal combustion engine (DICE) located at Building 574, Public Safety at UCSB. The proposed engine is a 69-bhp Model 4BT3.3-G5, manufactured by Cummins. The HRA screening was conducted using the District's DICE Screening Tool, which was developed using the USEPA-recommended screening model, AERSCREEN, and the Hotspots Analysis and Reporting Program (HARP) software, Version 2. Cancer risk and chronic non-cancer Hazard Index (HI) risk values were calculated and compared to *significance thresholds* for cancer and chronic non-cancer risk adopted by the District's Board of Directors. The calculated risk values and applicable thresholds are as follows:

	UCSB Bldg 574 DICE Max Risks	Significance Threshold
Cancer risk:	3.2/million	≥10/million
Chronic non-cancer risk:	<0.1	>1

Based on these results, the proposed DICE at UCSB does not present a significant risk to the surrounding community. For this reason, Authority to Construct No. 15406 will be issued for this project.

2.0 MODELING INFORMATION

The inputs to the DICE Screening Tool are shown in Figure 2.1 below.

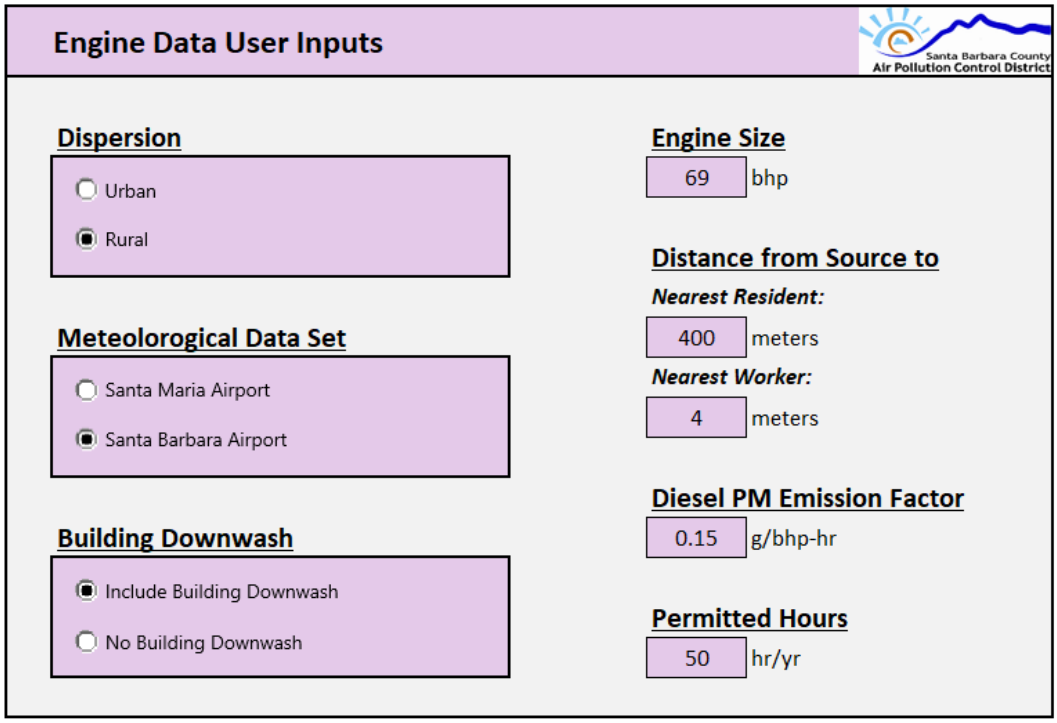


Figure 2.1 – User Inputs to DICE Screening Tool

3.0 EMISSIONS

The calculated emissions for this DICE are shown in Table 3.1. The maximum permitted usage of 50 hours per year for maintenance and testing purposes, maximum rated brake horsepower of 69 bhp for this engine, and CARB's *Final Regulation Order: Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines* particulate matter (PM) emission standard of 0.15 g/bhp-hr were used to calculate the annual emissions of diesel PM.

Table 3.1 – Facility Emissions Summary

Pollutant	Emissions (lb/yr)
Diesel PM	1.14

4.0 RESULTS

The cancer risk and chronic non-cancer risk are higher at the maximally exposed individual worker (MEIW) than at the maximally exposed individual resident (MEIR). Table 4.1 displays the cancer and chronic non-cancer risk results at the MEIW. All of the calculated risk values are below the District's significance thresholds.

Table 4.1 – Summary of Screening Tool Results

Pollutant	C_{annual} at MEIW ($\mu g/m^3$)	Cancer Risk (per million)	Chronic Non-Cancer Risk (Hazard Index)
Diesel PM	0.0516	**3.19**	**0.010**

5.0 REFERENCES

- Risk notification levels were adopted by the Santa Barbara County Air Pollution Control Board of Directors on June 1993. The risk notification levels were set at 10 per million for cancer risk and a Hazard Index of greater than 1.0 for non-cancer risk.
- California Air Resources Board. May 2011. *Final Regulation Order: Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines*. https://www.arb.ca.gov/diesel/documents/FinalReg2011.pdf.
- Office of Environmental Health Hazard Assessment. February 2015. *Air Toxics Hot Spots Program: Risk Assessment Guidelines*. California Environmental Protection Agency. http://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.
- Santa Barbara County Air Pollution Control District. July 2019. *Modeling Guidelines for Health Risk Assessments*. http://www.ourair.org/wp-content/uploads/apcd-15i.pdf.
- Santa Barbara County Air Pollution Control District. 2019. *DICE Health Risk Assessment Screening Tool*. https://www.ourair.org/dice-health-risk-assessment-screening-tool/.

6.0 ATTACHMENT

The DICE Screening Tool spreadsheet for this permit may be found in the following location: \\sbcapcd.org\shares\Toxics\SourceFiles\SSID02795UCSB\ATC 15406 HRA Screening

1.0 SUMMARY

An air toxics Health Risk Assessment (HRA) screening was conducted by the Santa Barbara County Air Pollution Control District (District) for a proposed diesel-fired internal combustion engine (DICE) located at Bldg 506 at UCSB in Santa Barbara. The proposed engine is a 161-bhp Model C4.4, manufactured by Caterpillar. The HRA screening was conducted using the USEPA-recommended screening model, AERSCREEN, with the Hotspots Analysis and Reporting Program (HARP) software, Version 2 (Build 21081). Cancer risk and chronic non-cancer Hazard Index (HI) risk values were calculated and added to existing refined HRA results for UCSB for inventory year 2008. The sum of the cancer and chronic non-cancer risk results were compared to *significance thresholds* adopted by the District's Board of Directors. The calculated risk values and applicable thresholds are as follows:

	UCSB DICE Max Risks	Significance Threshold
Cancer risk:	9.3/million	≥10/million
Chronic non-cancer risk:	0.3	>1

Based on these results, the proposed DICE at Bldg 506 at UCSB does not present a significant risk to the surrounding community.

2.0 MODELING INFORMATION

The stack parameter inputs to AERSCREEN View are outlined in Table 2.1.

Table 2.1 – Summary of Stack Parameter Inputs

Source ID	Source Type	Release Type	Release Height (ft)	Temperature (°F)	Velocity (ft/s)	Diameter (ft)
STCK1	POINT	Capped	8.0	942.0	87.137	0.417

The rural option was enabled, and a flagpole height of 1.5 meters was used for all receptors. The AERSURFACE output file for the 2012-2016 Santa Barbara Airport meteorological data set was used. The closest residential receptor at 93 m and the closest worker receptor at 204 m from the source were included. The inversion break-up fumigation and shoreline fumigation options were not enabled. Terrain effects were not included in the model. Building downwash was included, and the building information is shown in Table 2.2. The X and Y coordinates in the table are relative to the location of the diesel engine.

Table 2.2 – Summary of Building Information

Building ID	Height (m)	Building Type	SW Corner X-coordinate (m)	SW Corner Y-coordinate (m)	X-Length (m)	Y-Length (m)	Rotation Angle (deg)
BLD1	24.99	Rectangular	-15.0	0.0	92.35	59.13	0
BLD2	34.14	Rectangular	-13.0	73.15	75.9	193.85	0
BLD3	20.42	Rectangular	70.0	73.0	69.49	51.82	0
BLD4	7.62	Rectangular	5.5	-15.0	19.51	7.01	0
BLD5	4.57	Rectangular	-4.0	-8.0	7.01	35.36	180
BLD6	14.33	Rectangular	28.0	-69.0	50.6	61.57	0

After the pollutant concentrations were entered into HARP 2, the cancer risk was determined at the maximally exposed individual resident (MEIR) using the "individual resident" receptor type and the breathing rate from the "RMP using the Derived Method" for an exposure duration of 30 years. Under the inhalation pathway, the fraction of time at home (FAH) values were not applied for any age bins. The cancer risk was also determined at the maximally exposed individual worker (MEIW) using the "worker" receptor type and the breathing rate from the "OEHHA Derived Method" for an exposure duration of 25 years, with a worker adjustment factor of 4.2. The chronic non-cancer hazard index was calculated for the MEIR using the "individual resident" receptor type and the breathing rate from the "OEHHA Derived Method." The chronic non-cancer hazard index was also calculated for the MEIW using the "worker" receptor type and the breathing rate from the "OEHHA Derived Method." The only exposure pathway analyzed was the inhalation pathway because diesel PM is not a multipathway pollutant. A list of multipathway pollutants can be found in Table 5.1 of OEHHA's 2015 Guidance Manual, which is included in Section 4.4 of the District's *Modeling Guidelines for Health Risk Assessments*, referenced in Section 5.0 of this document.

3.0 EMISSIONS

The calculated emissions for this DICE are shown in Table 3.1. The maximum permitted usage of 40 hours per year for maintenance and testing purposes, maximum rated brake horsepower of 161 bhp for this engine, and CARB's *Airborne Toxic Control Measure for Stationary Compression Ignition Engines* particulate matter (PM) emission standard of 0.15 g/bhp-hr were used to calculate the annual emissions of diesel PM.

Table 3.1 – Facility Emissions Summary

Pollutant	Emissions (lb/yr)
Diesel PM	2.13

4.0 RESULTS

Table 4.1 displays the cancer and chronic non-cancer risk results at the MEIR and MEIW for the HRA screening for this DICE, the results for the 2008 refined HRA for UCSB, and the sum of the risk results. All of the calculated risk values are below the District's significance thresholds.

Table 4.1 – Summary of Risk Results

	Cancer Risk at the MEIR (per million)	Cancer Risk at the MEIW (per million)	Chronic Non-Cancer Risk at the MEIR (Hazard Index)	Chronic Non-Cancer Risk at the MEIW (Hazard Index)
DICE Screening:	4.29	1.03	0.001	0.001
2008 HRA:	5.02	0.93	0.293	0.120
Total:	**9.31**	**1.96**	**0.294**	**0.121**

5.0 REFERENCES

- Risk notification levels were adopted by the Santa Barbara County Air Pollution Control Board of Directors on June 1993. The risk notification levels were set at 10 per million for cancer risk and a Hazard Index of greater than 1.0 for non-cancer risk.

- California Air Resources Board. May 2011. *Final Regulation Order: Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines*. https://www.arb.ca.gov/diesel/documents/FinalReg2011.pdf.
- Office of Environmental Health Hazard Assessment. February 2015. *Air Toxics Hot Spots Program: Risk Assessment Guidelines*. California Environmental Protection Agency. http://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.
- Santa Barbara County Air Pollution Control District. December 2018. *DRAFT Health Risk Assessment Report: University of California Santa Barbara*.
- Santa Barbara County Air Pollution Control District. June 2020. *Modeling Guidelines for Health Risk Assessments*. https://www.ourair.org/wp-content/uploads/apcd-15i.pdf.
- Santa Barbara County Air Pollution Control District. 2021. *Meteorological Data*. https://www.ourair.org/metdata/.

6.0 ATTACHMENT

Source parameter data and the AERSCREEN and HARP 2 input and output files for this project may be found in the following location:
\\sbcapcd.org\shares\Toxics\SourceFiles\SSID02795UCSB\ATC 15774 HRA Screening

Attachment 10.7. Gasoline Tank Emissions

EMISSION CALCULATIONS
Device 114067 and 114066 in Marine Biotech Lab Building 555
FID 2795 last revised: 11/25/2014

Facility Data

Parameter	Annual		Daily	
	Value	Units	Value	Units
Gasoline Throughput [1]	20,000	gals/yr	55	gals/day

Notes:
(1) Daily thorughput is based on permitted gallons per year divided by 365 days/month.

Gasoline Emission Factors

Selection (enter "X")	Scenario	Scenario Description	Emission Factors					
			Loading	Breathing	Refueling	Spillage	Total	Units
	1	AG: No Control	8.58	2.15	8.58	0.62	19.93	lbs/1000 gals
X	2	AG: Phase I only	0.43	2.15	8.58	0.62	11.78	lbs/1000 gals
	3A	AG: Phase I and II w/o Vent Valve	0.43	2.15	0.43	0.43	3.43	lbs/1000 gals
	3B	AG: Phase I and II w/Vent Valve	0.43	0.54	0.00	0.00	0.97	lbs/1000 gals
	4	UG: No Control	8.58	1.02	8.58	0.62	18.80	lbs/1000 gals
	5A	UG: Phase I only	0.43	1.02	8.58	0.62	10.65	lbs/1000 gals
	5B	UG: Phase I with Vent Valve	0.43	0.26	8.58	0.62	9.89	lbs/1000 gals
	6A	UG: Phase I and II w/o Vent Valve	0.43	1.02	0.43	0.43	2.31	lbs/1000 gals
	6B	UG: Phase I and II w/Vent Valve	0.43	0.26	0.43	0.43	1.54	lbs/1000 gals
	6C	UG: 'Phase 1 EVR and II w/Vent Valve	0.17	0.26	0.43	0.43	1.28	lbs/1000 gals

Notes:
(1) Reference: GDF Emission Factors Memo (5-20-03).

AST Tank Emissions

E_{day} = 0.14 lb/day
E_{yr} = 0.03 tons/year

Notes:
(1) Loading of fuel into the AST bulk storage tank(s).
(2) Emissions inlcude loading and breathing losses.

Fueling Boats

E_{day} = 0.50 lb/day
E_{yr} = 0.09 tons/year

Notes:
(1) Loading of fuel from the dispenser into boats
(2) Uncontrolled. Loading of fuel from the dispesner into boats.
(3) Emissions include refueling and spillage.

Total AvGas Emissions

E_{day} = 0.65 lb/day
E_{yr} = 0.12 tons/year

Gasoline Dispensing Facility (GDF) Emissions Calculations - Building 336

DATE: 10/20/2020
Permit: PTO 13725 - R2
FID: 2795
Annual TP: 240,000 gal/yr
Scenario: 3C
ssion Factor: 1.515 lb/1000 gal

Daily: 1.20 lb/day
Annual: 0.19 tpy

Parameter	Annual		Daily	
	Value	Units	Value	Units
Gasoline Throughput [1]	240,000	gals/yr	--	--

Selection (enter "X")	Scenario	Scenrio Description	Loading	Breathing	Refueling	Spillage	Total	Units
	1	AG: No Control	8.40	2.10	8.40	0.61	**19.51**	lbs/1000 gals
	2	AG: Phase I only	0.42	2.10	8.40	0.61	**11.53**	lbs/1000 gals
	3A	AG: Phase I and II w/o Vent Valve	0.42	2.10	0.42	0.42	**3.36**	lbs/1000 gals
	3B	AG: Phase I and II w/Vent Valve	0.42	0.53	0.42	0.42	**1.79**	lbs/1000 gals
X	3C	AG: Phase I EVR and II w/Vent Valve	0.15	0.53	0.42	0.42	**1.52**	lbs/1000 gals
	4	UG: No Control	8.40	1.00	8.40	0.61	**18.41**	lbs/1000 gals
	5A	UG: Phase I only	0.42	1.00	8.40	0.61	**10.43**	lbs/1000 gals
	5B	UG: Phase I with Vent Valve	0.42	0.25	8.40	0.61	**9.68**	lbs/1000 gals
	6A	UG: Phase I and II w/o Vent Valve	0.42	1.00	0.42	0.42	**2.26**	lbs/1000 gals
	6B	UG: Phase I and II w/Vent Valve	0.42	0.25	0.42	0.42	**1.51**	lbs/1000 gals
	6C	UG: Phase 1 EVR and II w/Vent Valve	0.15	0.25	0.42	0.42	**1.24**	lbs/1000 gals
	7	UG: Phase I EVR and Phase II EVR w/ V	0.15	0.00	0.38	0.24	**0.77**	lbs/1000 gals

Basis: GDF Emission Factors Memo (11-18-2019)

AST Tank Emissions

E_{day} = 0.44 lb/day
E_{yr} = 0.08 tons/year

Notes:
(1) Loading of fuel into the AST bulk storage tank(s).
(2) Emissions inlcude loading and breathing losses.

Fueling Vehicles

E_{day} = 0.55 lb/day
E_{yr} = 0.10 tons/year

Notes:
(1) Controlled Loading of fuel from the dispenser to vehicles
(3) Emissions include refueling and spillage.

Hose Permeation Emissions - Balance Type

0.1 lb/day-per hose
3.74 lb/day-per hose

Number of Hoses 2
E_{day} = 0.2
E_{yr} = 0.00374

Total AvGas Emissions

E_{day} = 1.20 lb/day
E_{yr} = 0.19 tons/year

Attachment 10.8. Coating Operation Emissions

coatings and solvents:

material	brand		id #	material density (ppg)	ROC content (percent)	material use gal/day	material use gal/month	ROC emissions lb/day	ROC emissions tpy
primer	Frazee	n/a		10.70	51.00	0.05	1.00	0.251	0.033
enamel	Frazee	n/a		9.70	40.00	0.05	1.00	0.179	0.023
enamel	Dunn Edwards	n/a		11.52	25.00	0.05	1.00	0.133	0.017
epoxy primer	Zehrung	n/a		13.30	44.00	0.05	1.00	0.269	0.035
primer	O'Brien	n/a		11.40	30.00	0.02	0.50	0.079	0.010
solvent	Certified	n/a		10.00	100.00	0.02	0.50	0.230	0.030
solvent	Certified	n/a		10.00	100.00	0.02	0.50	0.230	0.030
enamel reducer	Dunn Edwards	n/a		8.50	100.00	0.05	1.00	0.391	0.051
varnish	Dunn Edwards	n/a		7.64	60.00	0.05	1.00	0.211	0.028
shellac	Zehrung	n/a		11.67	69.00	0.02	0.50	0.185	0.024
lacquer	Dunn Edwards	n/a		7.58	75.00	0.05	1.00	0.262	0.034
thinner	Dunn Edwards	n/a		6.63	100.00	0.05	1.00	0.305	0.040
spray paint	Borden	n/a		11.68	69.00	0.02	0.50	0.185	0.024
coating/solvent subtotals								**2.91**	**0.38**

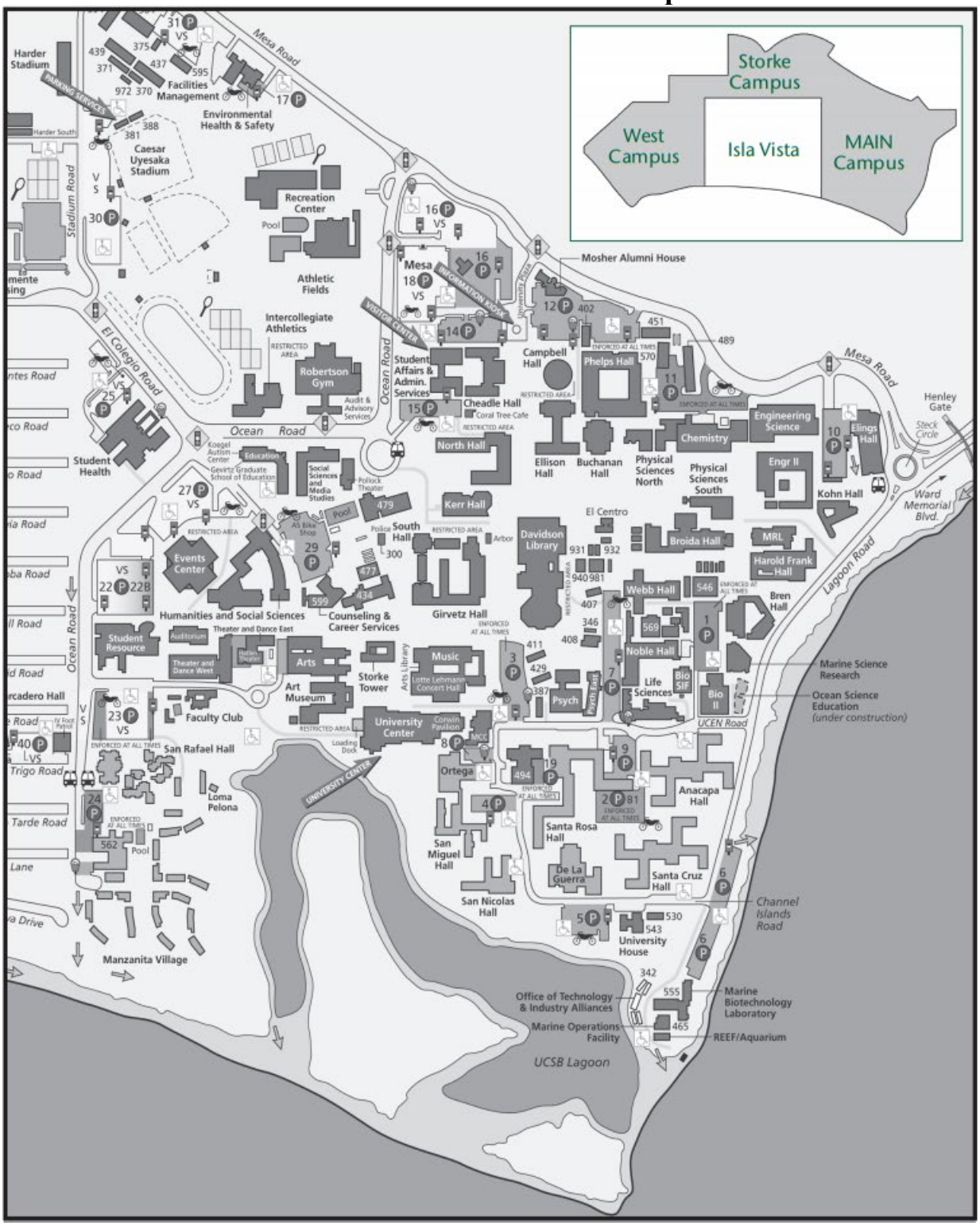
Notes:

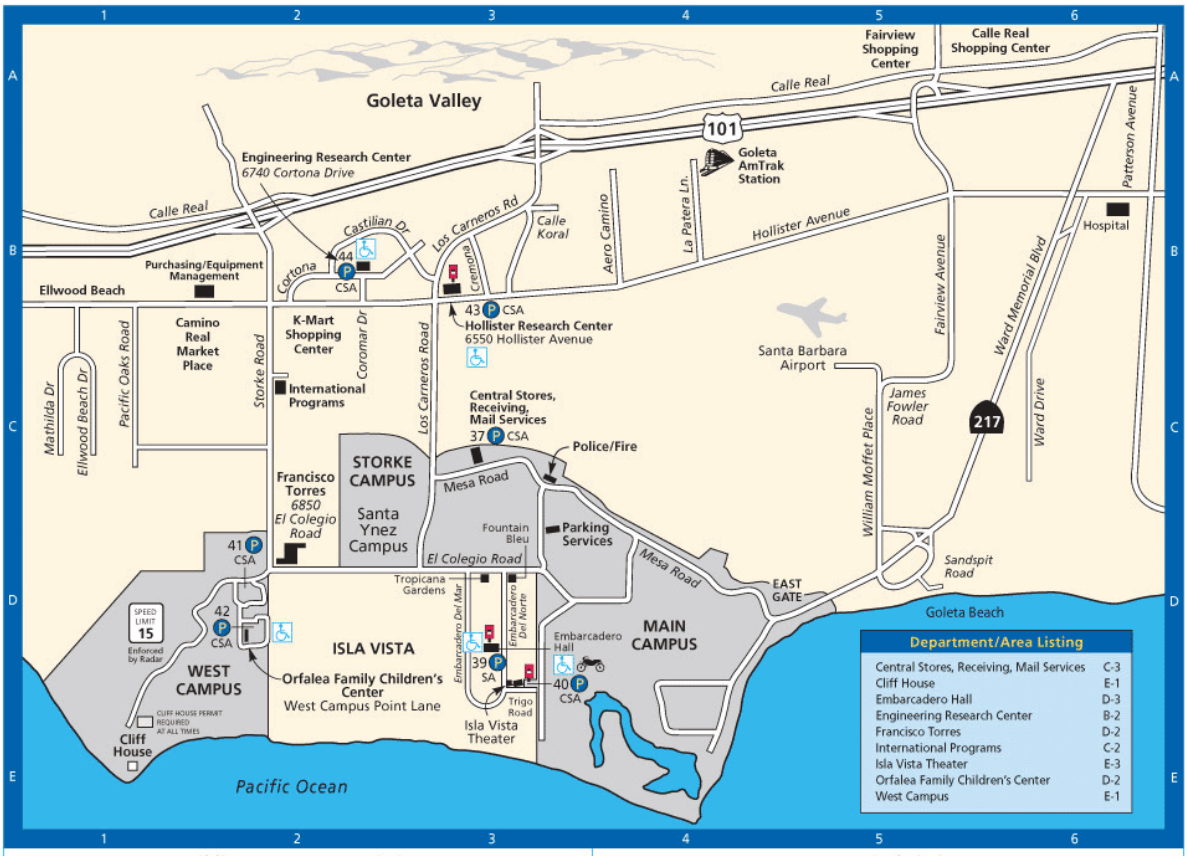
1. Material data and usage rates originate from the SBCAPCD Engineering Evaluation for the 1989 issuance of PTO 7601.
2. Alternatives to the permitted coatings/solvents and different individual usage rates may be used provided the emission limits are not violated.
3. The materials listed above have been used as the basis for setting the emission limits on PTO 10056 and are not intended as signifying compliance or non-compliance with the ROC limits in any APCD rule.

Attachment 10.9. Permits Incorporated into PTO 13725 – R3

Permit Type	Permit No.	Issue Date	Description	Subject to NSR
Permit to Operate	15774	Upon issuance of this permit	E/S Diesel Engine	Yes
Permit to Operate	15891	Upon issuance of this permit	External Combustion	Yes

Attachment 10.10. UCSB Maps





Building/Department Listing

Administration (Cheadle Hall)	552	D-4
Arbor	501	E-4
Arts (Art Museum)	534	E-3
Arts & Lectures (tickets, office)	402	C-4
Arts Library	531	E-3
Athletic Tickets (Robertson Gym)	533	D-3
Audit and Advisory Services	533	D-3
Biological Sciences II	571	E-5
Biological Sciences/Instructional Facilitiy	504	E-5
Biological Sciences Administration	478	E-5
Bren Hall	521	E-5
Broida Hall (Physics)	572	E-5
Buchanan Hall	573	D-4
California Nanosystems Institute (CNSI)	266	D-6
Campbell Hall	538	D-4
Centennial House	530	G-5
Central Stores, Mail, Receiving	507	A-1
Cheadle Hall (Administration)	552	D-4
Chemistry	557	D-5
College of Creative Studies	494	F-4
Coral Tree Cafe	532	D-3
Corwin Pavilion (University Center)	558	F-3
Dining Commons: Ortega	542	F-3
De La Guerra	549	F-4
Carrillo	562	F-1
Counseling and Career Services	599	E-3
Davidson Library	525	E-4
Ellison Hall	563	D-4
Engineering I (Harold Frank Hall)	556	E-5
Engineering II	503	D-5
Engineering Science	225	D-5
Environmental Health & Safety	565	B-2
Events Center	505	E-2
Facilities Management	439	B-1
Faculty Club	581	E-2
Geological Sciences (Webb Hall)	526	E-4
Gevirtz School of Education (Phelps Hall)	560	D-4
Girvetz Hall	564	E-3
Harold Frank Hall (Engineering I)	556	E-5
Hatlen Theater	554	B-2
Humanities & Social Sciences	515	E-2
Housing Information	549	F-4
Harder South	578	B-1
Harder Stadium	580	B-1
Information (Visitor Center)	568	D-3
Intercollegiate Athletics	243	D-3
Kavli Institute of Theoretical Physics (Kohn Hall)	567	D-6
Kerr Hall	591	D-3
Kohn Hall	567	D-6
Life Sciences	235	E-4
Lotte Lehmann Concert Hall	531	E-3
Marine Biotechnology Laboratory	555	G-5
Marine Science Institute	520	E-5
Marine Science Research	520	E-5
Materials Research Laboratory	615	D-5
Military Science	451	D-4
Mosher Alumni House	517	C-4
MSI Analytical Lab	445	D-6
MultiCultural Center/MCC (UCen)	558	F-3
Music	531	E-3
Natural Reserve System	520	E-5
Noble Hall	544	E-4
North Hall	535	D-4
Office of International Students and Scholars (OISS)	434	E-3
Office of Technology and Industry Alliances	342	G-4
Phelps Hall	560	D-4
Physical Sciences	557	D-5
Physical Sciences South	572	E-5
Physics (Broida Hall)	572	E-5
Psychology	551	E-4
Public Safety	574	A-1
Quest	981	E-4
Recreation Center	516	C-3
REEF/Aquarium	200	G-5
Residence Halls: Anacapa	547	F-5
Manzanita Village	875-893	G-2
Santa Cruz	548	F-5
Santa Rosa	527	F-4
San Nicolas	561	F-4
San Miguel	553	F-3
San Rafael	586-587	F-1
Robertson Gym	533	D-3
South Hall	528	E-3
Stadium (Harder Stadium)	580	B-1
Storke Tower	589	E-3
Student Affairs & Admin. Services	568	D-3
Student Health Center	588	D-1
Student Resource	221	E-1
Swimming Pool and Old Gym	479	D-3
Theater and Dance	223	E-2
Theaters: Hatlen	554	E-2
HSSB	515	E-2
Studio	554	E-2
Transportation & Parking Services	381-388	B-1
University Center (UCen)	558	F-3
University House	543	G-5
Webb Hall	526	E-4
Woodhouse Lab	546	E-5

Numerical Listing

200	REEF/Aquarium	G-5
221	Student Resource	E-1
223	Theater and Dance	E-2
225	Engineering Science	D-5
235	Life Sciences	E-4
243	Intercollegiate Athletics	D-3
266	California Nanosystems Institute (CNSI)	D-6
342	Office of Technology and Industry Alliances	G-5
381	Transportation & Parking Services	B-1
402	Arts & Lectures (tickets, office)	C-4
439	Design and Construction Services	B-1
439	Facilities Management	B-1
439	Physical Facilities	B-1
445	MSI Analytical Lab	D-6
451	Military Science	D-4
478	Biological Sciences Administration	E-5
479	Swimming Pool and Old Gym	D-3
494	College of Creative Studies	F-4
501	Arbor	E-4
503	Engineering II	D-5
504	Biological Sciences/Instructional Facility	E-5
505	Events Center	E-2
507	Central Stores, Mail, Receiving	A-1
515	Humanities & Social Sciences	E-2
515	HSSB Theater (HSSB Building)	E-2
516	Recreation Center	C-3
517	Mosher Alumni House	C-4
520	Marine Science Institute	E-5
520	Marine Science Research	E-5
520	Natural Reserve System	E-5
521	Bren Hall	E-5
525	Davidson Library	E-4
526	Geological Sciences (Webb Hall)	E-4
527	Residence Hall: Santa Rosa	F-4
528	South Hall	E-3
530	Centennial House	G-5
531	Arts Library	E-3
531	Lotte Lehmann Concert Hall	E-3
531	Music	E-3
532	Coral Tree Cafe	D-3
533	Athletics Tickets (Robertson Gym)	D-3
533	Audit and Advisory Services	D-3
533	Robertson Gym	D-3
534	Arts (Art Museum)	E-3
535	North Hall	D-4
538	Campbell Hall	D-4
542	Dining Commons: Ortega	F-3
543	University House	G-5
544	Noble Hall	E-4
546	Woodhouse Lab	E-5
547	Residence Hall: Anacapa	F-5
548	Residence Hall: Santa Cruz	F-5
549	Housing, Dining Commons: De La Guerra	F-4
551	Psychology	E-4
552	Cheadle Hall (Administration)	D-4
552	Information (Cheadle Hall)	D-4
553	Residence Hall: San Miguel	F-3
554	Hatlen Theater (Theater and Dance)	E-2
554	Studio Theater (Theater and Dance)	E-2
555	Marine Biotechnology Laboratory	G-5
556	Harold Frank Hall (Engineering I)	E-5
557	Chemistry	D-5
557	Physical Sciences	D-5
558	University Center (UCen)	F-3
558	MultiCultural Center/MCC (UCen)	F-3
560	Phelps Hall	D-4
561	Residence Hall: San Nicholas	F-4
562	Dining Commons: Carrillo	F-1
563	Ellison Hall	D-4
564	Girvetz Hall	E-3
565	Environmental Health & Safety	B-2
567	Kohn Hall (Kavli Institute of Theoretical Physics)	D-6
568	Student Affairs & Admin. Services	D-3
568	Visitor Center (Information)	D-3
571	Biological Sciences II	E-5
572	Broida Hall (Physics)	E-5
572	Physical Sciences South	E-5
573	Buchanan Hall	D-4
574	Public Safety	A-1
578	Harder South	B-1
580	Harder Stadium	B-1
581	Faculty Club	E-2
586-7	Residence Hall: San Rafael	F-1
588	Student Health Center	D-1
589	Storke Tower	E-3
591	Kerr Hall	D-3
599	Counseling and Career Services	E-3
615	Materials Research Laboratory	D-5
981	Quest	E-4

UC Santa Barbara

Attachment 10.11. Fee Statement

air pollution control district
SANTA BARBARA COUNTY

FEE STATEMENT
PT-70/Reeval No. 13725 – R3
FID: 02795 UCSB / SSID: 02795

Device No.	Device Name	Fee Schedule	Qty of Fee Units	Fee per Unit	Fee Units	Max or Min. Fee Apply?	Number of Same Devices	Pro Rate Factor	Device Fee	Penalty Fee?	Fee Credit	Total Fee per Device
114058	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114076	Boiler 1	A3	2.070	644.42	Per 1 million Btu input	No	1	1.000	1,333.95	0.00	0.00	1,333.95
114030	Diesel Emergency Standby Generator Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
390201	Benchtop Spray Booth	A2	1.000	44.53	Per total rated hp	Min	1	1.000	85.34	0.00	0.00	85.34
388327	Boiler #1	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
388328	Boiler #2	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
388329	Boiler #3	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
114057	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
393553	E/S Diesel Engine	A3	2.237	644.42	Per 1 million Btu input	No	1	1.000	1,441.57	0.00	0.00	1,441.57
394764	Hot Water Boiler	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
393445	Hot-Water Boiler #2	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
114056	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114055	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90

393026	Boiler B1	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
393027	Boiler B2	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
114063	Boiler B-3	A3	3.250	644.42	Per 1 million Btu input	No	1	1.000	2,094.37	0.00	0.00	2,094.37
114054	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114071	Diesel Engine - ESSB	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114128	Heater 1	A3	2.270	644.42	Per 1 million Btu input	No	1	1.000	1,462.83	0.00	0.00	1,462.83
114129	Heater 2	A3	2.270	644.42	Per 1 million Btu input	No	1	1.000	1,462.83	0.00	0.00	1,462.83
394768	Fuel Dispensers (2 Nozzle)	A8.a	1.000	49.40	Per nozzle	Min	2	1.000	686.84	0.00	0.00	686.84
114112	Water Heater 1	A3	3.000	644.42	Per 1 million Btu input	No	1	1.000	1,933.26	0.00	0.00	1,933.26
114113	Water Heater 2	A3	3.000	644.42	Per 1 million Btu input	No	1	1.000	1,933.26	0.00	0.00	1,933.26
388948	Boiler B-1	A3	1.460	644.42	Per 1 million Btu input	No	1	1.000	940.85	0.00	0.00	940.85
386140	Boiler B-2	A3	1.500	644.42	Per 1 million Btu input	No	1	1.000	966.63	0.00	0.00	966.63
386141	Boiler B-3	A3	1.500	644.42	Per 1 million Btu input	No	1	1.000	966.63	0.00	0.00	966.63
386142	Boiler B-4	A3	1.500	644.42	Per 1 million Btu input	No	1	1.000	966.63	0.00	0.00	966.63
386143	Boiler B-5	A3	1.500	644.42	Per 1 million Btu input	No	1	1.000	966.63	0.00	0.00	966.63
386144	Boiler B-6	A3	1.500	644.42	Per 1 million Btu input	No	1	1.000	966.63	0.00	0.00	966.63
386145	Boiler B-7	A3	1.500	644.42	Per 1 million Btu input	No	1	1.000	966.63	0.00	0.00	966.63
114134	Emergency Backup Generator	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
393029	Boiler B-1	A3	1.450	644.42	Per 1 million Btu input	No	1	1.000	934.41	0.00	0.00	934.41
393030	Boiler B-2	A3	1.450	644.42	Per 1 million Btu input	No	1	1.000	934.41	0.00	0.00	934.41
398570	Building 506, New Classroom Building		1.000	0			1	1.000	0.00	0.00	0.00	0.00
395544	E/S Engine	A3	1.143	644.42	Per 1 million Btu input	No	1	1.000	736.57	0.00	0.00	736.57
114052	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
388947	E/S Diesel Generator	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90

394908	Boiler #1	A3	4.000	644.42	Per 1 million Btu input	No	1	1.000	2,577.68	0.00	0.00	2,577.68
394910	Boiler #2	A3	4.000	644.42	Per 1 million Btu input	No	1	1.000	2,577.68	0.00	0.00	2,577.68
388933	Boiler #6	A3	0.398	644.42	Per 1 million Btu input	No	1	1.000	256.48	0.00	0.00	256.48
388935	Boiler #7	A3	0.398	644.42	Per 1 million Btu input	No	1	1.000	256.48	0.00	0.00	256.48
388936	Boiler #8	A3	0.398	644.42	Per 1 million Btu input	No	1	1.000	256.48	0.00	0.00	256.48
388937	Boiler #9	A3	0.398	644.42	Per 1 million Btu input	No	1	1.000	256.48	0.00	0.00	256.48
388938	Boiler #10	A3	0.398	644.42	Per 1 million Btu input	No	1	1.000	256.48	0.00	0.00	256.48
388939	Boiler #11	A3	0.398	644.42	Per 1 million Btu input	No	1	1.000	256.48	0.00	0.00	256.48
388940	Boiler #12	A3	0.398	644.42	Per 1 million Btu input	No	1	1.000	256.48	0.00	0.00	256.48
388941	Boiler #13	A3	0.398	644.42	Per 1 million Btu input	No	1	1.000	256.48	0.00	0.00	256.48
114092	Boiler 1	A3	2.500	644.42	Per 1 million Btu input	No	1	1.000	1,611.05	0.00	0.00	1,611.05
114093	Boiler 2	A3	2.500	644.42	Per 1 million Btu input	No	1	1.000	1,611.05	0.00	0.00	1,611.05
114094	Boiler 3	A3	2.500	644.42	Per 1 million Btu input	No	1	1.000	1,611.05	0.00	0.00	1,611.05
114051	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
393622	Boiler #1	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
393623	Boiler #2	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
393624	Boiler #3	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
114050	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114084	Boiler 1	A3	4.600	644.42	Per 1 million Btu input	No	1	1.000	2,964.33	0.00	0.00	2,964.33
114049	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114085	Boiler 1	A3	2.970	644.42	Per 1 million Btu input	No	1	1.000	1,913.93	0.00	0.00	1,913.93
114048	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
393439	Hot-Water Boiler #1	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84

393440	Hot-Water Boiler #2	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
386852	E/S Diesel Generator	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
387978	Boiler 1	A3	1.410	644.42	Per 1 million Btu input	No	1	1.000	908.63	0.00	0.00	908.63
387979	Boiler 2	A3	1.410	644.42	Per 1 million Btu input	No	1	1.000	908.63	0.00	0.00	908.63
393041	E/S Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
393266	Boiler 1	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
387629	Boiler 2	A3	1.500	644.42	Per 1 million Btu input	No	1	1.000	966.63	0.00	0.00	966.63
393551	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
393552	E/S Diesel Engine	A3	1.000	644.42	Per 1 million Btu input	No	1	1.000	644.42	0.00	0.00	644.42
394710	E/S Diesel Engine	A3	0.489	644.42	Per 1 million Btu input	No	1	1.000	315.12	0.00	0.00	315.12
387982	Boiler 4	A3	1.900	644.42	Per 1 million Btu input	No	1	1.000	1,224.40	0.00	0.00	1,224.40
387983	Boiler 3	A3	1.900	644.42	Per 1 million Btu input	No	1	1.000	1,224.40	0.00	0.00	1,224.40
387981	Boiler 2	A3	1.900	644.42	Per 1 million Btu input	No	1	1.000	1,224.40	0.00	0.00	1,224.40
387980	Boiler 1	A3	1.900	644.42	Per 1 million Btu input	No	1	1.000	1,224.40	0.00	0.00	1,224.40
114710	Boiler B-1	A3	2.970	644.42	Per 1 million Btu input	No	1	1.000	1,913.93	0.00	0.00	1,913.93
114711	Boiler B-2	A3	2.970	644.42	Per 1 million Btu input	No	1	1.000	1,913.93	0.00	0.00	1,913.93
393444	Hot-Water Boiler #1	A3	2.600	644.42	Per 1 million Btu input	No	1	1.000	1,675.49	0.00	0.00	1,675.49
114139	E/S Diesel-fired Generator	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114059	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114079	Boiler 1	A3	2.600	644.42	Per 1 million Btu input	No	1	1.000	1,675.49	0.00	0.00	1,675.49
114080	Boiler 2	A3	2.600	644.42	Per 1 million Btu input	No	1	1.000	1,675.49	0.00	0.00	1,675.49
114047	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
393267	Boiler 1	A3	2.940	644.42	Per 1 million Btu input	No	1	1.000	1,894.59	0.00	0.00	1,894.59

393268	Boiler 2	A3	2.940	644.42	Per 1 million Btu input	No	1	1.000	1,894.59	0.00	0.00	1,894.59
114046	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
393269	Boiler 1	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
393270	Boiler 2	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
114045	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
393593	Boiler 1	A3	1.536	644.42	Per 1 million Btu input	No	1	1.000	989.83	0.00	0.00	989.83
393594	Boiler 2	A3	1.536	644.42	Per 1 million Btu input	No	1	1.000	989.83	0.00	0.00	989.83
393625	Boiler #1	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
393626	Boiler #2	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
114064	Emergency Backup Generator	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
393442	Hot-Water Boiler #1	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
393443	Hot-Water Boiler #2	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
394712	E/S Diesel Engine	A3	0.489	644.42	Per 1 million Btu input	No	1	1.000	315.12	0.00	0.00	315.12
114067	Aboveground Storage Tank	A8.b	1.000	644.20	Per permit	No	1	1.000	644.20	0.00	0.00	644.20
114033	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114044	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114043	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
393447	Hot-Water Boiler #1	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
393448	Hot-Water Boiler #2	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
114130	IC Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
393441	Hot-Water Boiler #1	A3	3.120	644.42	Per 1 million Btu input	No	1	1.000	2,010.59	0.00	0.00	2,010.59
387971	Boiler 2	A3	1.500	644.42	Per 1 million Btu input	No	1	1.000	966.63	0.00	0.00	966.63
114070	Emergency Backup Generator	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90

114131	Hot-Water Boiler 1	A3	1.530	644.42	Per 1 million Btu input	No	1	1.000	985.96	0.00	0.00	985.96
114132	Hot-Water Boiler 2	A3	1.530	644.42	Per 1 million Btu input	No	1	1.000	985.96	0.00	0.00	985.96
114038	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114251	Parker Boiler #1	A3	1.680	644.42	Per 1 million Btu input	No	1	1.000	1,082.63	0.00	0.00	1,082.63
114252	Parker Boiler #2	A3	1.680	644.42	Per 1 million Btu input	No	1	1.000	1,082.63	0.00	0.00	1,082.63
395683	Boiler B3	A3	1.500	644.42	Per 1 million Btu input	No	1	1.000	966.63	0.00	0.00	966.63
395684	Boiler B2	A3	1.500	644.42	Per 1 million Btu input	No	1	1.000	966.63	0.00	0.00	966.63
114124	Boiler 1	A3	4.600	644.42	Per 1 million Btu input	No	1	1.000	2,964.33	0.00	0.00	2,964.33
114125	Boiler 2	A3	4.200	644.42	Per 1 million Btu input	No	1	1.000	2,706.56	0.00	0.00	2,706.56
114110	Boiler 1	A3	2.100	644.42	Per 1 million Btu input	No	1	1.000	1,353.28	0.00	0.00	1,353.28
114042	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114041	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114040	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114135	Hot-Water Boiler 1	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
114136	Hot-Water Boiler 2	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
114137	Hot-Water Boiler 3	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
114138	Hot-Water Boiler 4	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
114039	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114037	E/S Diesel Engine #1	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
394714	E/S Diesel Engine	A3	0.489	644.42	Per 1 million Btu input	No	1	1.000	315.12	0.00	0.00	315.12
114036	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114127	B1	A3	2.160	644.42	Per 1 million Btu input	No	1	1.000	1,391.95	0.00	0.00	1,391.95
393200	Boiler B2	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84

388960	E/S Diesel Generator	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
393446	Hot-Water Boiler #1	A3	2.500	644.42	Per 1 million Btu input	No	1	1.000	1,611.05	0.00	0.00	1,611.05
114035	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
394662	Hot-Water Boiler	A3	3.900	644.42	Per 1 million Btu input	No	1	1.000	2,513.24	0.00	0.00	2,513.24
386829	Boiler B-2	A3	2.000	644.42	Per 1 million Btu input	No	1	1.000	1,288.84	0.00	0.00	1,288.84
114034	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114060	E/S Diesel Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
114029	Firewater Pump Engine	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
393008	Boiler 1	A3	1.500	644.42	Per 1 million Btu input	No	1	1.000	966.63	0.00	0.00	966.63
393011	Boiler 2	A3	1.500	644.42	Per 1 million Btu input	No	1	1.000	966.63	0.00	0.00	966.63
393012	Boiler 3	A3	1.500	644.42	Per 1 million Btu input	No	1	1.000	966.63	0.00	0.00	966.63
114068	Automotive Type Spray Booth	A2	1.500	44.53	Per total rated hp	Min	1	1.000	85.34	0.00	0.00	85.34
388928	E/S Diesel Generator	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
388929	Portable E/S Diesel Water Pump	A1.a	1.000	85.90	Per equipment	No	1	1.000	85.90	0.00	0.00	85.90
	Device Fee Sub-Totals =								**$126,217.30**	**$0.00**	**$0.00**	
	Device Fee Total =											**$126,217.30**

Permit Fee

Fee Based on Devices **$126,217.30**

Fee Statement Grand Total = $126,217

Notes:

(1) Fee Schedule Items are listed in District Rule 210, Fee Schedule "A".
(2) The term "Units" refers to the unit of measure defined in the Fee Schedule.

Attachment 10.12. Permit Exempt Equipment

UCSB Non-Permitted Equipment Inventory

Small Boilers and Hot Water Heaters

Bldg Number	Building Name	Equipment Type	Manufacturer	Rated Heat Input (MMBtu/hr)	Manufacure Year	Equipment ID	Model	Serial Number
221	Student Resources Bldg (SRB)	Water Heater	Bradford White Co.	0.076	2011		U2XR75S6RN	LD34243352
225	Engineering Science Bldg	Water Heater	AO Smith	0.199	2003		BTR 197 110	ME03-2497548-110
235	Life Sciences Bldg (LSB)	Water Heater	Bradford White Co.	0.199		Water Heater WH-1	DCG31	FC11704203
235	Life Sciences Bldg (LSB)	Water Heater	American	0.199		Water Heater WH-2	DCG32	ZH3588701
243	Intercollegiate Athletics	Boiler	Parker	1.140	2004	Boiler-B1	T114OL	55434
243	Intercollegiate Athletics	Boiler	Lochinvar	0.740	2004	Boiler-B2	CWN0745PN	1031100157899
266	California Nanosystems	Boiler	Raypak	0.181	2004	GIWH-1	WH1-0181	411228310
266	California Nanosystems	Boiler	Raypak	0.181	2004	GIWH-2	WH1-0181	411228309
266	California Nanosystems	Water Heater	Bradford White Co.	0.032		GHW-3	M430T6FBN7	BE620526-394
276	Social Sciences and Media Studies	Water Heater	Bradford White Co.	0.040	2006		M45036FBN	EK11158296
276	Social Sciences and Media Studies	Water Heater	Rheem	0.040	2014		PROG48-40U RH58	RHUNM061413096
355	Orfalea Family Childrens Center	Water Heater	Rheem	0.075	2009	Water Heater	42V75F	RHLN0310N00084
437	Facilities Management	Water Heater	Rheem	0.038	2009		22V40F1	RHLN0909Z03220
451	Military Science	Water Heater	Bradford White Co.	0.040	2006		MI5036FBN	EH10971735
479	Old Gym	Water Heater	Rheem	0.075	2010	Water Heater	42V75F	RHLN0110N00020
489	Sycamore Hall	Boiler	Raypak	0.136			133A-T	0186100282
489	Sycamore Hall	Water Heater	American Water Heater Co.	0.033			G61-30T33-3N	218119346
494	College of Creative Studies	Boiler	Raypak	0.510		Boiler-B1	E510T	0882102505
494	College of Creative Studies	Water Heater	Rheem	0.038			22V50F1	RHLN0606Z03325
503	Engineering II	Boiler	Parker	1.460	2008		T1460LR	59157
503	Engineering II	Water Heater	Bradford White Co.	0.085			100T88B3N	KB17771910
504	Biological Science	Water Heater	Bradford White Co.	0.040		Water Heater WH-1	M45036FBN	GA12902779
504	Biological Science	Water Heater	AO Smith	0.030		Water Heater WH-2	PGC 30 930	NA83-25200-N62
505	Events Center	Boiler	AO Smith	0.420	1999		HW 420 932	932 J 99 52707
505	Events Center	Boiler	AO Smith	0.420	1999		HW 420 932	932 J 99 52589
511	Rec Cen Multi Activity Center	Boiler	Lochinvar	0.750	2004	Boiler-B1	CFN751PM	F041100165183
511	Rec Cen Multi Activity Center	Boiler	Lochinvar	0.750	2004	Boiler-B2	CFN751PM	F041100165187
514	Ocean Science Education Building	Water Heater	AO Smith	0.076	2013		BTX80 100	1111M000322
515	Humanities and Social Sciences	Boiler	Raypak	0.627	?	Boiler-B5	N0624CDEARDAA	9505123710
515	Humanities and Social Sciences	Boiler	Bryan	0.350	1995	Boiler-B4	F350WGI	77043
515	Humanities and Social Sciences	Water Heater	Bradford White Co.	0.150			EF100T150E3N2	CD7630003
512	BioEngineering	Steam Boiler	Fulton	0.398	2016	B3	ICS-9.5	
512	BioEngineering	Steam Boiler	Fulton	0.398	2016	B4	ICS-9.5	
512	BioEngineering	Steam Boiler	Fulton	0.398	2016	B5	ICS-9.5	
516	Recreation Center (Rec Cen)	Furnace	Hastings	0.800		HV-1	RDG-400-HME	45868
516	Recreation Center (Rec Cen)	Boiler	Lochinvar	0.750	1994	Boiler-B3	C11N0750	D933943

516	Recreation Center (Rec Cen)	Boiler	Lochinvar	0.750	1994	Boiler-B4	C11N0750	D933930
516	Recreation Center (Rec Cen)	Boiler	Lochinvar	0.750	1994	Boiler-B8	C11N0750	K939030
516	Recreation Center (Rec Cen)	Boiler	Lochinvar	0.750	1994	Boiler-B9	C11N0750	D933934
516	Recreation Center (Rec Cen)	Boiler	Lochinvar	0.500	1994	Boiler-B1	C11N0500	D933935
516	Recreation Center (Rec Cen)	Boiler	Lochinvar	0.500	1994	Boiler-B2	C11N0500	D933934
516	Recreation Center (Rec Cen)	Boiler	Parker	0.395			WH395L	60493
517	Mosher Alumni House	Boiler	Parker	0.672	2011	Boiler B-1		60421
520	Marine Science Research Bldg	Boiler	Ventura	0.270	2003	Boiler-B2	27V125AMXL	903110976
520	Marine Science Research Bldg	Water Heater	Bradford White Co.	0.085			100T88B3N	HM15900475
521	Bren School of Environmental	Water Heater	Bradford White Co.	0.199	2001		D100L199E3N	BH6504843
525	Davidson Library	Boiler	Parker	1.730	1985	Boiler-B1	T1730	31277
525	Davidson Library	Boiler	Parker	1.730	1987	Boiler-B2	T1730	34233
525	Davidson Library Addition	Boiler	Parker	0.788		B-01	TC210	
525	Davidson Library Addition	Boiler	Parker	0.535		B-02	TC210	
526	Geology	Boiler	Parker	1.410	2002	Boiler-B1	W111410	53909
526	Geology	Boiler	Parker	1.410	2002	Boiler-B2	W111410	53910
526	Geology	Water Heater	Rheem	0.038	2008		22V50F1	RHLN0608Z06481
527	Santa Rosa Hall 1100s	Boiler	Lochinvar	0.800	2012	Boiler#1	Knight	F12H10213774
527	Santa Rosa Hall 1100s	Boiler	Lochinvar	0.800	2012	Boiler#2	Knight	H12H10227793
527	Santa Rosa Hall 1200s	Boiler	Cleaver Brooks	0.500	2012	Boiler#1	Knight	F12H10213783
527	Santa Rosa Hall 1200s	Boiler	Cleaver Brooks	0.500	2012	Boiler#2	Knight	F12H10213782
531	Music and Lotte Lehman Concert	Boiler	Raypak	1.120	1986	Boiler-B1	E1125T	786103667
531	Music and Lotte Lehman Concert	Water Heater	Bradford White Co.	0.076	2004	Water Heater WH-1	M2XR75S6BN	EK11183334
531	Music and Lotte Lehman Concert	Water Heater	Bradford White Co.	0.040	2013		U440T6RN	LJ34993112
533	Robertson Gym	Boiler	Parker	1.900	2001	Boiler-B1	W119100	53110
533	Robertson Gym	Boiler	Parker	1.900	2001	Boiler-B2	W119100	53111
533	Robertson Gym	Boiler	Parker	1.900	2001	Boiler-B3	W119100	53108
533	Robertson Gym	Boiler	Parker	1.900	2001	Boiler-B4	W119100	53109
533	Robertson Gym	Boiler	Vanguard	0.330	2001	Boiler-B5	Power Pack 330N	0501330N106
534	Arts Museum	Boiler	Bryan	0.350	1999	Boiler-B4	F350WGI	83867
534	Arts Museum	Water Heater	Bradford White Co.	0.199			D100L199E3N	JG16911394
534	Arts Museum	Water Heater	Rheem	0.040	2014	Water Heater	PROG48-40U RH58	RHUNM111410612
535	North Hall	Boiler	Lochinvar	1.999	2021			
538	Campbell Hall	Boiler	Raypak	0.627	1985	Boiler-B1	E624T	0685102995
538	Campbell Hall	Water Heater	Bradford White Co.	0.040	2009	Water Heater WH-1	U45036FRN	KB17898727
540	Greenhouse	Water Heater	Bradford White Co.	0.032	2006		M430T6FBN	FM12722268
542	Ortega Dining Commons	Boiler	Parker	0.995		SB 1	25L(23)	60955
542	Ortega Dining Commons	Boiler	Parker	0.995		SB2	25L(23)	60956
542	Ortega Dining Commons	Boiler	Cleaver Brooks	0.999				
542	Ortega Dining Commons	Boiler	Cleaver Brooks	0.999				

544	Noble Hall	Water Heater	Bradford White Co.	0.125		GHW-1	D75T125E3N	CL8473649
544	Noble Hall	Water Heater	Bradford White Co.	0.076		GHW-2	75T80B3N	CJ8269528
546	Woodhouse	Water Heater	Bradford White Co.	0.032	2009		U430T6FRN	KJ8824701
547	Anacapa Hall 1000s-Public	Boiler	Lochinvar	0.999	2013	Boiler 1	SBN100	K11H00237090
547	Anacapa Hall 1000s-Public	Boiler	Lochinvar	0.999	2013	Boiler 2	SBN100	J11H00236463
548	Santa Cruz	Boiler	Cleaver Brooks	0.999			CFCE-700-1000-125HW	6.04297E+11
548	Santa Cruz	Boiler	Cleaver Brooks	0.999			CFCE-700-1000-125HW	6.04297E+11
551	Psychology	Boiler	Bryan	0.650	1985	Boiler-B3	FN650SG	61079
552	Cheadle Hall	Boiler	Raypak	1.630	1982	Boiler-B1	EC1630T	882102507
552	Cheadle Hall	Boiler	Raypak	1.630	1982	Boiler-B2	EC1630T	882102508
552	Cheadle Hall	Water Heater	American	0.080	1996	Water Heater WH-1	CG32100T884N	982120080
554	Theater and Dance East and	Water Heater	Bradford White Co.	0.250	2002	Water Heater WH-1	D100L250E3N	YF 1591346
555	Marine Science and Biotech	Boiler	Raypak	1.570	1989	Boiler-B2	11157ACRA11CBA	688103925
555	Marine Science and Biotech	Boiler	Raypak	0.510	2003	Boiler-B3	W1110514	301204013
555	Marine Science and Biotech	Boiler	Parker	0.395	2012		966525	60952
555	Marine Science and Biotech	Water Heater	Bradford White Co.	0.076			U2XR75S6RN	KA17582441
555	Marine Science and Biotech	Water Heater	Bradford White Co.	0.076			U2XR75S6RN	LC34228932
556	Engineering I	Boiler	Parker	1.730	1991	Boiler-B1	T1730	39604
556	Engineering I	Water Heater	Bradford White Co.	0.040	2009	Hot Water Heater WH-1	U45036FRN	LA33917160
557	Chemistry	Boiler	Raypak	1.220	1983	Boiler B-3	EC1223T	183100003
560	Phelps Hall	Water Heater	AO Smith	0.040			GNR 50 200	1235T457838
563	Ellison Hall	Water Heater	Bradford White Co	0.040	2006	Hot Water Heater WH-1	M45036FBN	FD11834236
564	Girvetz Hall	Water Heater	Rheem	0.050	2004		42V50-50NT	RHLN0504102673
565	Environmental Health and Safety	Water Heater	Bradford White Co	0.040	2009		U440T6FRN	LA33819108
565	Environmental Health and Safety	Water Heater	Bradford White Co	0.032	2006		M430T6FBN	EH10963234
567	Kohn Hall	Boiler	Parker	0.672	2015		G672RL	62052
567	Kohn Hall	Boiler	Parker	0.395	2004	Boiler-B2	T395L	55444
567	Kohn Hall	Water Heater	Bradford White Co	0.040	2009		U440T6FRN	LE34406733
568	Student Affairs-Administrative	Boiler	Bryan	1.200	1996	Boiler-B1	AB120WFDGLNX	78178
568	Student Affairs-Administrative	Water Heater	Rheem	0.038	2010	Water Heater WH-1	22V50F1	RHLN0810Z00872
568	Student Affairs-Administrative	Water Heater	Rheem	0.038	2014	Water Heater WH-2	PROG38-38U RH60	RHUNM141417233
569	Biology Shop	Boiler	American Standard	0.870		Boiler-B1	G607	
570	Physical Science	Boiler	Bradford White Co	0.270	2004		D100L270E3N	HJ15568840
570	Physical Science	Water Heater	Rinnai	0.199			REU-KA3237WD-US	CKBA-028668
570	Physical Science	Boiler	Rheem	0.180			G76-180	URNG 0801G02458
571	Biological Sciences II	Boiler	Parker	0.390	1978	Steam Boiler SB-5	10395	24487
571	Biological Sciences II	Boiler	Parker	0.390	1978	Steam Boiler SB-6	10395	24485
571	Biological Sciences II	Boiler	Parker	0.199	2011	Steam Boiler AB	966224	60271
571	Biological Sciences II	Boiler	Parker	0.199	2011	Steam Boiler CD	966224	60289
571	Biological Sciences II	Boiler	Parker	0.199	2011	Steam Boiler EF	966224	60272

571	Biological Sciences II	Boiler	Parker	0.199	2011	Steam Boiler GH	966224	60290
571	Biological Sciences II	Water Heater	Bradford White Co.	0.125	2004	Water Heater WH-1	EF60T125E3NA2	GK14026727
571	Biological Sciences II	Water Heater	Bradford White Co.	0.125	2004	Water Heater WH-2	EF60T125E3NA2	GK14026725
572	Broida Hall (Physics Bldg)	Water Heater	Bradford White Co.	0.199	2011	Domestic Water Heater WH-4	D100L199E3N	KB17839050
572	Broida Hall (Physics Bldg)	Water Heater	Bradford White Co.	0.085	2004	Industrial Water Heater WH-1	MI100T6BN	GF13639126
572	Broida Hall (Physics Bldg)	Water Heater	Bradford White Co.	0.085	2004	Domestic Water Heater WH-3	MI100T6BN	HF15139699
572	Broida Hall (Physics Bldg)	Water Heater	Bradford White Co.	0.076	2011	Industrial Water Heater WH-2	U75T80R3N	LC34228663
573	Buchanan Hall	Boiler	American Standard	1.740	1986	Boiler-B1	2BJ3	G-6013
573	Buchanan Hall	Water Heater	American Water Heater Co.	0.040			FG140T403NO	0513109671
575	Cloud Lab	Water Heater	Bradford White Co.	0.040	2006	Water Heater WH-1	M44076FBN	EM11331151
580	Harderr Stadium	Boiler	Parker	1.140	1994	Boiler-B1	T1140	43708
588	Student Health	Water Heater	American Water Heater Co.	0.199		Water Heater WH-2	BCG3100T1996NOX 108	1313M000121
588	Student Health	Water Heater	American Water Heater Co.	0.199		Water Heater WH-3	BCG3100T1996NOX 108	1039M000018
588	Student Health	Water Heater	AO Smith	0.076		Water Heater WH-1	BT 80 110	ME02-1679792-110
591	Kerr Hall	Water Heater	AO Smith	0.040	2006	Water Heater WH-1	GVR 50 100	D06J007886
591	Kerr Hall	Water Heater	Bradford White Co.	0.040	2009	Water Heater WH-2	U45036FRN	LC34188174
591	Kerr Hall	Boiler	Parker	2.000		G2304RL	G2304RL	63969
594	Facilities Management Shop	Water Heater	AO Smith	0.040	2014		GNR 40 200	1233T457161
595	Central Garage	Water Heater	American Appliance Corp.	0.030	1992		GVF90-333S	9232301576
615	Materials Research Lab	Water Heater	Bradford White Co.	0.040	2009	Water Heater WH-1	U45036FRN	KC18048488
615	Materials Research Lab	Water Heater	American Water Heater Co.	0.040		Water Heater WH-2	G61-50T40-3N	0218126111
650	San Joaquin Villages	Boiler	Parker	0.420		B-1	G672R(L)	
650	San Joaquin Villages	Boiler	Parker	0.350		B-2	G672R(L)	
650	San Joaquin Villages	Boiler	Parker	0.300		B-1 Cluster 1	G672R(L)	
650	San Joaquin Villages	Boiler	Parker	0.350		B-2 Cluster 3	G672R(L)	
657	Physical Sciences Building North	Boiler	Ajax	0.250		Boiler-B3	SGXFD250	83186
657	Physical Sciences Building North	Water Heater	Bradford White Co.	0.076			75T80B3N	EB10208844
657	Physical Sciences Building North	Water Heater	Bradford White Co.	0.076			U2XR75S6RN	KB17784064
672	Physical Sciences Building South	Water Heater	Rheem	0.040	2004	Water Heater WH-1	42V40-40F	RHLN 0804V11151
708	West Campus Office & Front	Water Heater	American	0.199		W736-BLD-BOILER	DCG31-100T199-6NOX	ZF3359163
708	West Campus Rec Room & Back	Water Heater	American	0.199		W737-BLD-BOILER	DCG3100L2706N	982120036
740	West Campus Boiler Rm740-	Boiler	Raypac lo nox	0.334	03/10/2000	Boiler	WH1- 0331	1101318993
741	West Campus Boiler Rm741-	Boiler	Raypac	0.334		Boiler	WH1-0330	201190476
742	West Campus Boiler Rm742-	Boiler	Raypac lo nox	0.334	03/14/2000	Boiler	WH1-0031	A00-54788
743	West Campus Boiler Rm743-	Boiler	Raypac	0.334		Boiler	WH!-0331	605251752
744	West Campus Boiler Rm744-	Boiler	Raypac	0.334	11/23/2002	Boiler	WH1-0331	810288567
745	West Campus Boiler Rm745-	Boiler	Raypac-Raytherm	0.334	10/12/2004	Boiler	WH10331	0401215898
745	West Campus Boiler Rm745-	Boiler	Raypac lo nox	0.334	10/12/2004	Storage Tank-Boiler	WH1-0331	401215898
746	West Campus Boiler Rm746-	Boiler	Raypac	0.334	04/15/2003	Boiler	WH1-0331	605251751
747	West Campus Boiler Rm747-	Boiler	Raypac	0.334	08/23/1999	Boiler	WH1-0330	104181820

748	West Campus Boiler Rm748-	Boiler	Raypac	0.334	11/16/2005	Boiler	WH1-0331	1006311561
749	West Campus Boiler Rm749-	Boiler	Raypac lo nox	0.334		Boiler	WH1-0331	1011316242
750	West Campus Boiler Rm750-	Boiler	Raypac	0.334		Boiler	WH1-0330	306209236
751	West Campus Boiler Rm751-	Boiler	Raypac	0.334	07/14/2004	Boiler	WH1-0331	401215897
752	West Campus Boiler Rm752-	Boiler	Raypac	0.334	02/19/2003	Boiler	WH1-0331	810288563
753	West Campus Boiler Rm753-	Boiler	Raypac	0.334	01/07/2003	Boiler	WH!-0031	605251750
754	West Campus Boiler Rm754-	Boiler	Raypac	0.334		Boiler	WH10-0331	510241371
755	West Campus Boiler Rm755-	Boiler	Raypac	0.334	04/24/2006	Boiler	WH1-0331	805282472
756	West Campus Boiler Rm756-	Boiler	Raypac lo nox	0.334	09/25/2002	Boiler	WH1-0331	1101318862
757	West Campus Boiler Rm757-	Boiler	Raypac lo nox	0.334	06/11/2002	Boiler	WH1-0331	1101318862
768	Storke Office & Laundry	Water Heater	American	0.275	02/13/2014	S786-BLD-WHC	BCG3100T1996NOX108	1204M002012
778	Storke Grounds Shop & Lndy	Water Heater	American	0.275		S778-BLD-WHC	BCG3100T2756NOX108	1113M001671
799	Storke Community Ctr	Water Heater	Rheem	0.030		S799-BLD-WHC	21X30-7N	RN0595134167
808	Santa Ynez Community Center	Water Heater	American	0.030		Y808-BLD-WHC	G51-30T33-3N	9724354707
815	Santa Ynez Community Ctr	Water Heater	AO Smith	0.199		Y815-BLD-WHC	BTR197100	ML980788209
817	Santa Ynez Office and Laundry	Water Heater	American	0.270	40210	Y817-BLD-BOILER	DCG3-100T270	0918F704269
818	Santa Ynez Jameson OAL	Water Heater	American	0.040		Y818-BLD-WHC	GCV-40-200-00L010S45	1049J006150
823	Santa Ynez Community Ctr	Water Heater	American	0.030		Y823-BLD-WHC	GVF90-333T	9029305234
831	Santa Ynez Fitness Center	Water Heater		0.031		Y831-BLD-WHC	N30FFHEMV	I86RNO-01275047
831	Santa Ynez Casitas Fitness	Water Heater		0.031			N30FFHMEV	I86RN01275033
832	Santa Ynez Maintenance Shp	Water Heater	American	0.034	12/20/2000	Y832-BLD-WHC	G61-40T34-3N	0016110690
841	San Clemente Arrowhead Village	Boiler	Lochinvar	0.638	2008	Boiler (DHW)	CHN751	A07H00193917
841	San Clemente Arrowhead Village	Boiler	Lochinvar	0.638	2008	Boiler (DHW)	CHN751	I06H00190753
841	San Clemente Arrowhead Village	Boiler	Lochinvar	0.400	2008	Boiler (HHW)	CFN401PM	B07H00194709
841	San Clemente Arrowhead Village	Boiler	Lochinvar	0.400	2008	Boiler (HHW)	CFN401PM	A07H00194707
843	San Clemente Castaic Village	Boiler	Lochinvar	0.638	2008	Boiler (DHW)	CHN751	K06H00192816
843	San Clemente Castaic Village	Boiler	Lochinvar	0.638	2008	Boiler (DHW)	CHN751	K06H00192815
843	San Clemente Castaic Village	Boiler	Lochinvar	0.400	2008	Boiler (HHW)	CFN401PM	A07H00194042
843	San Clemente Castaic Village	Boiler	Lochinvar	0.400	2008	Boiler (HHW)	CFN401PM	A07H00194706
845	San Clemente Encino Village	Boiler	Lochinvar	0.638	2008	Boiler (DHW)	CHN751	C06H00185265
845	San Clemente Encino Village	Boiler	Lochinvar	0.638	2008	Boiler (DHW)	CHN751	J06H00192171
845	San Clemente Encino Village	Boiler	Lochinvar	0.400	2008	Boiler (HHW)	CFN401PM	K06H00192672
845	San Clemente Encino Village	Boiler	Lochinvar	0.400	2008	Boiler (HHW)	CFN401PM	A07H00194044
846	San Clemente Donner Village	Boiler	Lochinvar	0.638	2008	Boiler (DHW)	CHN751	I06H00190754
846	San Clemente Donner Village	Boiler	Lochinvar	0.638	2008	Boiler (DHW)	CHN751	I06H00190757
846	San Clemente Donner Village	Boiler	Lochinvar	0.400	2008	Boiler (HHW)	CFN401PM	A07H00194705
846	San Clemente Donner Village	Boiler	Lochinvar	0.400	2008	Boiler (HHW)	CFN401PM	J06H00192437
849	San Clemente Bradbury Village	Boiler	Lochinvar	0.638	2008	Boiler (DHW)	CHN751	A07H00193918
849	San Clemente Bradbury Village	Boiler	Lochinvar	0.638	2008	Boiler (DHW)	CHN751	A07H00193919
849	San Clemente Bradbury Village	Boiler	Lochinvar	0.400	2008	Boiler (HHW)	CFN401PM	B07H00194708

849	San Clemente Bradbury Village	Boiler	Lochinvar	0.400	2008	Boiler (HHW)	CFN401PM	A07H00193956
860	Portola Dining Commons	Boiler	Max Performance	0.800		Steam Boiler	SBX-1375	86-29389
864	MV La Patera Quad-La Cumbre	Water Heater	Raypac-Raytherm	0.650	09/01/2002	MVLP-884-1225	WH3-0652	0203192637
864	MV La Patera Quad-La Cumbre	Boiler	Weil-McLain	0.494	09/01/2002	Boiler (2.3)	478	CP4160597
878	MV Las Encinas Quad-Cienaga	Water Heater	Raypac-Raytherm	0.650	09/01/2002	MVLE-878-1101	WH3-0652	203192634
878	MV Las Encinas Quad-Cienaga	Boiler	Weil-McLain	0.494	09/01/2002	Boiler (1.2)	478	CP4160599
880	MV Las Encinas Quad-Arguello	Water Heater	Raypac-Raytherm	0.650	09/01/2002	MVLE-880-1301	WH3-0652	0203192633
880	MV Las Encinas Quad-Arguello	Boiler	Weil-McLain	0.494	09/01/2002	Boiler (1.4)	478	CP4160594
881	MV Las Encinas Quad-Miranda	Water Heater	Raypac-Raytherm	0.650	09/01/2002	MVLE-881-1414	WH3-0652	203192629
881	MV Las Encinas Quad-Miranda	Boiler	Weil-McLain	0.494	09/01/2002	Boiler (1.5)	478	CP4160596
883	MV La Patera Quad-Condor	Water Heater	Raypac-Raytherm	0.650	09/01/2002	MVLP-883-1102	WH3-0652	203192636
883	MV La Patera Quad-Condor	Boiler	Weil-McLain	0.494	09/01/2002	Boiler (2.2)	478	CP4160601
886	MV La Patera Quad-Tepusquet	Water Heater	Raypac-Raytherm	0.650	09/01/2002	MVLP-886-1427	WH3-0652	203192631
886	MV La Patera Quad-Tepusquet	Boiler	Weil-McLain	0.494	09/01/2002	Boiler (2.5)	478	CP4160602
889	MV Los Robles Quad-Camuesa	Water Heater	Raypac-Raytherm	0.650	09/01/2002	MVLR-889-1102	WH3-0652	203192635
889	MV Los Robles Quad-Camuesa	Boiler	Weil-McLain	0.494	09/01/2002	Boiler (3.2)	478	CP4160598
890	MV Los Robles Quad-Pendola	Water Heater	Raypac-Raytherm	0.650	09/01/2002	MVLR-890-1224	WH3-0652	203192632
890	MV Los Robles Quad-Pendola	Boiler	Weil-McLain	0.494	09/01/2002	Boiler (3.3)	478	CP4160595
892	MV Los Robles Quad-Madulce	Water Heater	Raypac-Raytherm	0.650	09/01/2002	MVLR-892-1425	WH3-0652	203192630
892	MV Los Robles Quad-Madulce	Boiler	Weil-McLain	0.494	09/01/2002	Boiler (3.5)	478	CP4160600
945	El Dorado Apartments-Entire	Water Heater	American	0.199	42039	945-CPLX-BOILER	BCG3100T1996NOX108	1346M000826
945	El Dorado Apartments-Entire	Water Heater	American	0.199	42039	945-CPLX-BOILER	BCG3100T1996NOX108	1201M001458
946	Westwinds Apartments-Entire	Boiler	Raypac	0.399		Boiler #1	W2-0403	9903157817
946	Westwinds Apartments-Entire	Boiler	Raypac	0.399		Boiler #2	W2-0403	9902156625
947	Westgate Apartments-Entire	Water Heater	American	0.199	05/03/2002	947-CPLX-BOILER	DCG3-100T199-6NOH	0905F704349
947	Westgate Apartments-Entire	Water Heater	American	0.199	3/24/2009	947-CPLX-BOILER	DCG3-100T199-6NOH	0905F704351
1861	Portola Dining Commons	Boiler	Parker	0.563		B-1	TC150 (L)	
1861	Portola Dining Commons	Boiler	Parker	0.563		B-2	TC150 (L)	
1863	Tenaya South Tower	Boiler	Parker	0.325		B-1	G72RL	
1863	Tenaya South Tower	Boiler	Parker	0.325		B-2	G72RL	
1864	Tenaya North Tower	Boiler	Parker	0.325		B-1	G72RL	
1864	Tenaya North Tower	Boiler	Parker	0.325		B-2	G72RL	
6560	KITP Residence	Boiler	AERCO	0.990		B-1	BMK 1000	
6560	KITP Residence	Boiler	AERCO	0.990		B-2	BMK 1001	
7940	Del Mar Cottage	Water Heater	AO Smith	0.040	07/31/2008	DMC-WHC	GCV 40 100 00L010S45	0804J004173
226	Henley Hall	Water Heater	Parker	0.895		B-1	TC350L	
226	Henley Hall	Water Heater	Parker	0.895		B-2	TC350L	

Total	108.704
Heat Input 0.075 - 0.4 MMBtu	27.533
Heat Input 0.4 - 2 MMBtu/h	81.171

Heat input total (MMBtu/hr) for uncontrolled units (.075-.4 MMBtu/hr)	Emission Factors (lb/MMBtu)[1]						short term emissions					
	NOx	ROC	CO	SOX	PM	GHG	NOx lb/day	ROC lb/day	CO lb/day	Sox lb/day	Pm lb/day	GHG
15.258	0.092	0.0054	0.039	0.0137	0.0075	117	33.69	1.98	14.28	5.02	2.75	42844.46

Heat input total (MMBtu/hr) for Rule 360 units (.075-.4 MMBtu/hr)	Emission Factors (lb/MMBtu)[2]						short term emissions					
	NOx	ROC	CO	SOX	PM	GHG	NOx lb/day	ROC lb/day	CO lb/day	Sox lb/day	Pm lb/day	GHG
12.275	0.066	0.0054	0.039	0.0137	0.0075	117	19.44	1.59	11.49	4.04	2.21	34468.20

Heat input total (MMBtu/hr) for uncontrolled units (.4-2 MMBtu/hr)	Emission Factors (lb/MMBtu)[3]						short term emissions					
	NOx	ROC	CO	SOX	PM	GHG	NOx lb/day	ROC lb/day	CO lb/day	Sox lb/day	Pm lb/day	GHG
54.229	0.098	0.0054	0.082	0.0137	0.0075	117	127.55	7.03	106.72	17.83	9.76	152275.03

Heat input total (MMBtu/hr) for Rule 360 units (.4-2 MMBtu/hr)	Emission Factors (lb/MMBtu)[4]						short term emissions					
	NOx	ROC	CO	SOX	PM	GHG	NOx lb/day	ROC lb/day	CO lb/day	Sox lb/day	Pm lb/day	GHG
23.545	0.036	0.0054	0.297	0.0137	0.0075	117	20.34	3.05	167.83	7.74	4.24	66114.36

Equipment split into four groups with specific emission factors from AP42 and Rule 360

Notes
[1]Units rated less than or equal to .4 MMBtu/hr with a manufacture year of 2003 or earlier used AP42 uncontrolled EF's for units rated between 0.075 - 0.40 MMBtu/hr
[2]Units rated less than or equal to .4 MMBtu/hr with a manufacture year of 2004 or greater used Rule 360 EF's for units rated between 0.075 - 0.40 MMBtu/hr
[3]Units rated greater than .4MMBtu/hr with a manufacture year of 2003 or earlier used AP42 uncontrolled EF's for units rated between 0.4 - 2.0 MMBtu/hr
[4]Units rated greater than .4 MMBtu/hr with a manufacture year of 2004 or greater used Rule 360 EF's for units rated between 0.4 - 2.0 MMBtu/hr

Total Long Term Emissions (TPY)					
NOx	**ROC**	**CO**	**SOx**	**PM**	**GHG**
36.69	**2.49**	**54.81**	**6.32**	**3.46**	**53965.63**

UCSB Non-Permitted Equipment Inventory

Natural Gas Furnaces

Bldg Number	Building Name	Equipment Type	Manufacturer	Rated Heat Input (MMBtu/hr)	Equipment ID	Model	Serial Number
266	California Nanosystems Institute (CNSI)	Humidifier/Furnace	Nortec	0.280	TH-1	GSTC200NOC	649442GS2A07
266	California Nanosystems Institute (CNSI)	Humidifier/Furnace	Nortec	0.280	TH-2	GSTC200NOC	649442GS2A09
266	California Nanosystems Institute (CNSI)	Humidifier/Furnace	Nortec	0.280	PH-1	GSTC200NOC	649442GS2A06
266	California Nanosystems Institute (CNSI)	Humidifier/Furnace	GTS	0.800		GTS-800 DI	1229451-01-02
266	California Nanosystems Institute (CNSI)	Humidifier/Furnace	GTS	0.800		GTS-800 DI	1229451-01-01
354	West Creative Studies	Furnace	Goodman	0.075		GMP075-3	9810625205
370	Facilities Management	Furnace	AMA	0.088		395CAV036075	2192A09663
371	Facilities Management	Furnace	Unknown	0.080		TGLS080B12MP11A	W0B9610387
371	Facilities Management	Furnace	AMA	0.088		395CAV036075	2192A09662
551	Psychology	Furnace	Payne	0.125		125U-19A	EEGCB35476
551	Psychology	Furnace	Payne	0.125		125U-19A	MDGCA-58179
437	Facilities Management	Furnace	Payne	0.100		394GAW000100	4781C08070
437	Facilities Management	Furnace	Payne	0.125		394GAW048125	4881A00653
437	Facilities Management	Furnace	York	0.135		D2NP060N11025NXA	NOA8601468
439	Facilities Management	Furnace	Payne	0.080		8OU-19	MBGGB 14540
439	Facilities Management	Furnace	Payne	0.080		8OU-19	MBGGB 14632
439	Facilities Management	Furnace	Payne	0.100		10OU-19	MBGGB 27678
439	Facilities Management	Furnace	Bryant	0.115		582APW060115NAAG	2104G51754
451	Military Science	Furnace	Payne	0.150		150061-19A	unknown
479	Old Gym	Furnace	Modine	0.175		BO175SE2530	15101011100-7872
479	Old Gym	Furnace	Modine	0.175		BO175SE2530	
489	Sycamore Hall	Furnace	Goodman	0.140		GMH81405DXCA	0904005077
489	Sycamore Hall	Furnace	Goodman	0.140		GMH81405DXCB	100170815
494	College of Creative Studies	Furnace	International Comfort Products	0.144		PGF090H16AA	L003588069
494	College of Creative Studies	Furnace	International Comfort Products	0.080		GPCM36H080F	G073211725
504	Biological Science	Furnace	International Comfort Products	0.090	DX-2	PDG348090H001C1	C112930458
504	Biological Science	Furnace	Trane	0.060	DC-3		415102094L
504	Biological Science	Furnace	International Comfort Products	0.080	DX-1	GPCM48H080F	G053741130
504	Biological Science	Furnace	Sterling Radiator	0.400	RTU-7	F3G-RT40A6B01A41D20B1A5	M01246933007001
504	Biological Science	Furnace	Sterling Radiator	0.400	RTU-6	F3G-RT40A6B01A41D20B1A5	M0124933006001
504	Biological Science	Furnace	Sterling Radiator	0.400	RTU-4	F3G-RT40A6B01A41D20B1A5	M0124933004001
504	Biological Science	Furnace	Sterling Radiator	0.400	RTU-5	F3G-RT40A6B01A41D20B1A5	M0124933005001
504	Biological Science	Furnace	Sterling Radiator	0.150	RTU-3	E3G-RT15C6B01A41A020B1A8A5	M0124933003001
504	Biological Science	Furnace	Sterling Radiator	0.200	RTU-2	E3G-RT20A6B01A41D20B1A5	M0124933002001
504	Biological Science	Furnace	Sterling Radiator	0.100	RTU-1	E3G-RT10C6B01A41A20B1A8A5	M0124933001001
516	Recreation Center (Rec Cen)	Furnace	Hastings	0.800	HV-1	RDG-400-HME	45868
526	Geology	Furnace	Bryant	0.060		574DPWA36060NA	211C75926
526	Geology	Furnace	Bryant	0.060		574DPWA36060NA	211C75923
539	Greenhouse Shop	Water Heater	International Comfort Products	0.100		GPCM60H100F	G053750984
540	Greenhouse	Furnace	Sterling Radiator	0.106		CFE-125	C8734764
540	Greenhouse	Furnace	Sterling Radiator	0.127		CFE-150	C8734767
540	Greenhouse	Furnace	Aerothermes	0.100		3E369D	A98G005477
546	Woodhouse	Furnace	Lennox	0.120	DX-4	GCS16-060-120-4Y	5603M07730
546	Woodhouse	Furnace	International Comfort Products	0.244	DX-2	PGE090H224AA	G054820598
546	Woodhouse	Furnace	Carrier	0.060	New DX Unit	48HJL006-541	1607G30573
546	Woodhouse	Furnace	Lennox	0.125	HDX-7	CS16-653-125-1Y	
546	Woodhouse	Furnace	Arcoaire	0.090	DX-9	PGD336090H001C1	C120803798
546	Woodhouse	Furnace	Arcoaire	0.060	DX-6	PGD330060K001C1	C112500847
546	Woodhouse	Furnace	Arcoaire	0.090	DX-5	PGD336090H001C1	C114341028
546	Woodhouse	Furnace	Lennox	0.120	DX-3	GCS16-060-120-4Y	56003M07727
546	Woodhouse	Furnace	Lennox	0.120	DX-1	GCS16-060-120-4Y	5603M07728
565	Environmental Health and Safety	Furnace	International Comfort Products	0.090	DX-6	RGS060HMAA0AAAA	G104530270
565	Environmental Health and Safety	Furnace	Carrier	0.115	DX-4	48TJE006-B501QE	2994G20187
565	Environmental Health and Safety	Furnace	Carrier	0.074	DX-5	48TJD005-B501QE	2994G20266
565	Environmental Health and Safety	Furnace	Carrier	0.115	DX-3	48TJE006-B501QE	3194G21551
565	Environmental Health and Safety	Furnace	Carrier	0.115	DX-2	48TJE006-B501QE	3194G21558
565	Environmental Health and Safety	Furnace	Carrier	0.115	DX-1	48TJE006-B501QE	3194G21549
567	Kohn Hall	Furnace	Carrier	0.115	AC-2	48TCRA07D2A6A0A0A0	4213C88836
567	Kohn Hall	Furnace	Carrier	0.180	AC-1	48TCSD14D3A6A0A0G0	4213G20032
567	Kohn Hall	Furnace	Carrier	0.090	AC-5	48TCMA04D2A6A0A0A0	4113C88690
567	Kohn Hall	Furnace	Carrier	0.180	AC-6	48TCSD14D3A6A0A0G0	4313P60254
567	Kohn Hall	Furnace	Carrier	0.180	AC-4	48TCSD14D3A6A0A0G0	4213G20031
567	Kohn Hall	Furnace	Carrier	0.040	AC-8	48ESNA2404030	4313C02722
575	Cloud Lab	Furnace	International Comfort Products	0.130	DX-3	PGF090H1599	L003588658
575	Cloud Lab	Furnace	International Comfort Products	0.080	DX-4	CPCM36H0BOF	G073211717
584	Facilitity Maintenance	Furnace	York	0.080		D4NZ048N06525NXA	1A1672314
584	Facilitity Maintenance	Furnace	Carrier	0.060		48GSN036060511CU	2504611958
584	Facilitity Maintenance	Heater	Unknown	0.125		Unknown	Unknown
584	Facilitity Maintenance	Heater	Unknown	0.125		Unknown	Unknown
595	Central Garage	Heater	Modine	0.150		PDP150AE0130	39010917091212-6519
595	Central Garage	Heater	Aerothermes	0.100		3E369D	A98G000434

UCSB Non-Permitted Equipment Inventory

Residential Natural Gas Water Heaters and Wall Heaters

Bldg Name	Quantity	Rated Heat Input (MMBtu/hr)	
		Per Unit	Total
Residential Water Heaters			
West Campus	20	0.036	0.72
Storke Campus	300	0.034	10.20
Storke II 42	42	0.034	1.43
Santa Ynez	200	0.036	7.20
El Dorado	3	0.035	0.11
Westgate	2	0.034	0.07
Residential Wall Heaters			
Storke 1 Wall Heaters	300	0.035	10.50
Storke 2 FAU	42	0.050	2.10
West Campus Wall Heaters	250	0.035	8.75
Santa Ynez FAU	200	0.050	10.00
		sum	**51.07**

Heat input total (mmbtu/hr)	uncontrolled emission factors (lb/MMBtu)					
	NOx	ROC	CO	SOx	PM	GHG
51.071	0.092	0.0054	0.039	0.0137	0.0075	117

Note* Assuming operation 24hr per day, 365 days per year
emission factors are AP42 uncontrolled factors for boilers rated between .075-.4 MMBtu/hr

short term emissions (lb/day)					
Nox	ROC	CO	SOx	PM	GHG
112.76	6.62	47.80	16.79	9.19	143407.37

Long Term Emissions (TPY)					
NOx	**ROC**	**CO**	**SOx**	**PM**	**GHG**
20.58	**1.21**	**8.72**	**3.06**	**1.68**	**26171.84**

UCSB Non-Permitted Equipment Inventory

Natural Gas Kilns

Bldg Number	Bldg Name	Quantity	Heat Input (MMBtu/hr)
516	Recreation Center	1	0.63
516	Recreation Center	1	0.31
534	Arts	1	0.24
534	Arts	1	0.24
		Total	**1.420**

Heat input total (mmbtu/hr)	uncontrolled emission factors (lb/MMBtu)[1]					
	NOx	ROC	CO	SOX	PM	GHG
1.420	0.092	0.0054	0.039	0.0137	0.0075	117

short term emissions (lb/day)					
Nox	ROC	CO	Sox	PM	GHG
3.14	0.18	1.33	0.47	0.26	3987.36

Long Term Emissions (TPY)					
Nox	**ROC**	**CO**	**Sox**	**PM**	**GHG**
0.57	**0.03**	**0.24**	**0.09**	**0.05**	**727.69**

[1] Emissions are based on AP42 uncontrolled EF's for small boiler units rated between 0.075 - 0.40 MMBtu/hr

UCSB Non-Permitted Equipment Inventory

Generators

Bldg Number	Bldg Name	Fuel	Year	kW	HP	Make	Model	Serial Number
526	Geology	Natural Gas	TBD	10	13	Power Pack	GA SE41810	894
527	Santa Rosa Residence Hall	Diesel	TBD	20	27	John Deere	4024TF270	PE4024T094358
528	South Hall	Natural Gas	2009	75	120	Olympian	G80F3	OLY00000ENGD01591
531	Music Bldg	Natural Gas	TBD	15	20	Onan	15JC-4R/6413R	268012780
533	Robertson Gym	Natural Gas	TBD	25	34	Onan	25EC-4R8/854F	98B594476
538	Campbell Hall	Diesel	TBD	20	27	Caterpillar	C2.2	F1A01782
543	University House	Natural Gas	1968	15	20	Onan	15JC4R/7404R	768045617
546	Woodhouse	Natural Gas	2014	25	34	Olympian	G25LTA2	GXAO2878
547	Anacapa Residence Hall	Diesel	TBD	20	27	Generac	70874	TBD
548	Santa Cruz Residence Hall	Diesel	TBD	20	27	Generac	70874	TBD
552	Cheadle Hall	Natural Gas	TBD	55	74	Onan	55KB-4R8/1562H	1640770104
554	Snidecor	Natural Gas	TBD	15	20	Onan	15HC-4R8/18B	34C762541
560	Phelps Hall	Diesel	2012	30	40	Caterpillar	D30-10	CAT00000JBGE01499
563	Ellison Hall	Natural Gas	TBD	45	60	Onan	45EM-4R/2765A	127C995327
573	Buchanan Hall	Natural Gas	TBD	12.5	17	Onan	12RJC-4R8/6552R	117C995333
574	Police Dept	Propane	TBD	25	34	Kohler	30R829189A10	295701
579	South Sewer Pump	Natural Gas/Propane	TBD	75	120	Olympian	G80F3	OLY0000ANGD00680
587	San Rafael Residence Hall	Diesel	2012	30	40	Generac	1475090100	2116631
588	Student Health	Natural Gas/Propane	1969	70	94	Koehler	85R7257448A	319356
589	Storke Tower	Diesel	2012	30	40	Caterpillar	D30-10	CAT00000AGBE01507
591	Kerr Hall	Natural Gas	TBD	30	40	Pincor	RFW30SBA	1014
948	Isla Vista Theater	Diesel	TBD	TBD	TBD	Onan	TBD	TBD
6990	Devereux Lift Station	Gasoline	TBD	13	20.8	Ford	L-23-3N	LSG-4231-6005
				sum	**948.8**			

HP total for Diesel fired Engines	[2]Emission Factors (g/bhp-hr)					
	NOx	ROC	CO	SOX	PM	GHG
228.000	14.1	1.12	3	0.183	1	557

Long Term Emissions (TPY)					
Nox	ROC	CO	Sox	PM	GHG
1.77	0.14	0.38	0.02	0.13	69.99

HP total for Natural Gas fired Engines	[3]Emission Factors (g/bhp-hr)					
	NOx	ROC	CO	SOX	PM	GHG
720.800	10.52	1.71	17.72	0.0028	0.045	557

Long Term Emissions (TPY)					
Nox	ROC	CO	Sox	PM	GHG
4.18	0.68	7.04	0.00	0.02	221.28

Total Long Term Emissions (TPY)					
Nox	**ROC**	**CO**	**Sox**	**PM**	**GHG**
5.95	**0.82**	**7.42**	**0.02**	**0.14**	**291.27**

Notes

[1] Engine HP estimated using generator rating and estimated efficiency of 75%

[2] Emission Factors for Diesel Engines are from AP42 Table 3.3-1 and 3.3-2 default factors

[3] Estimated natural gas emission factors based on BSFC for naturaly aspiring spark ignition engines of 10,500 BTU/bhp-hr and AP42 factors for uncontrolled 4 stroke rich burn natural gas-fired reciprocating engines. (AP 42 - 3.2). GHG emissions based on mass balance and calculations from section 5.3 in PT70 PTO 13725

Assuming operation of 500 hrs per year

UCSB Non-Permitted Equipment Inventory

Small Boilers and Hot Water Heaters

Bldg Number	Building Name	Equipment Description	Use Description	Manufacturer	Rated Heat Input (MMBtu/hr)	Model	Serial Number
542	Ortega Dining Commons	Convection Oven-Top Unit	Kitchen-Production	Blodgett Ovens	0.060	DFG-200	102011YH003T
542	Ortega Dining Commons	Convection Oven-Bottom	Kitchen-Production	Blodgett Ovens	0.060	DFG-200	102011YH004B
542	Ortega Dining Commons	Convection Oven-Top Unit	Kitchen-Production	Blodgett Ovens	0.060	DFG-200	090110RA001T
542	Ortega Dining Commons	Convection Oven-Bottom	Kitchen-Production	Blodgett Ovens	0.060	DFG-200	090110RA002B
542	Ortega Dining Commons	Oven- Six Burner-Steam	Kitchen-Production	US Range Co	0.040	C836-6	7.051
542	Ortega Dining Commons	Oven-Top Deck	Kitchen-Production	Blodgett Ovens	0.037	961	052507AB070T
542	Ortega Dining Commons	Oven-Middle Deck	Kitchen-Production	Blodgett Ovens	0.037	961	052507AB071M
542	Ortega Dining Commons	Oven-Bottom Deck	Kitchen-Production	Blodgett Ovens	0.037	961	052507AB072B
542	Ortega Dining Commons	Baxter Rotating Bakery Oven	Kitchen-Bakery	Baxter	0.300	OV500G2	24-2003652
549	DLG-Dining Commons	Rotating Rack Oven	Kitchen-Bakery	Baxter	0.300	OV21062	24-1024327
549	DLG-Dining Commons	Pizza Oven - Top	Pizza Area	Montague	0.160	25P-2	B4-D-52733
549	DLG-Dining Commons	Pizza Oven - Bottom	Pizza Area	Montague	0.160	25P-2	B4-D-52733
549	DLG-Dining Commons	Convection Oven-Middle	Kitchen-Production	Montague	0.115	2-115	
549	DLG-Dining Commons	Convection Oven-Right (next	Kitchen-Production	Montague	0.115	2-115	
549	DLG-Dining Commons	Convection Oven-Left (next	Kitchen-Production	Montague	0.115	2-115	
562	Carrillo Dining Commons	Convection Oven-Bottom	Kitchen-Catering	Montague	0.063	HX2-63A	D-57033A
562	Carrillo Dining Commons	Convection Oven-Top Unit	Kitchen-Catering	Montague	0.063	HX2-63A	D-57033A
562	Carrillo Dining Commons	Cooktop/Oven-4 Burner	Kitchen-Catering	Montague	0.180	M36-5A	D-57033C
562	Carrillo Dining Commons	Oven-Rack Type	Kitchen-Bakery	Baxter	0.290	OV210GNZB	24-100-8959
562	Carrillo Dining Commons	Convection Oven-Bottom	Kitchen-Bakery	Blodgett Ovens	0.060	DFG-200-L-S	061201EA024B
562	Carrillo Dining Commons	Convection Oven-Top Unit	Kitchen-Bakery	Blodgett Ovens	0.060	DFG-200-L-S	101800EA039T
562	Carrillo Dining Commons	Griddle/Oven	Kitchen-Euro	Jade	0.140	JTRH-3HT-36	250701-N
562	Carrillo Dining Commons	Cooktop/Oven-6 Burner	Kitchen-Euro	Jade	0.245	JTRH-6-36	250701-L
562	Carrillo Dining Commons	Cooktop/Oven-4 Burner	Kitchen-Mongolian Grill	Jade	0.175	JTRH-4-36	250701-T
562	Carrillo Dining Commons	Exhaust Hood-Pizza Oven	Kitchen-Pizza	Gaylord	0.200	SGBDL-0-WS-33	GI-0501-1226002
562	Carrillo Dining Commons	Convection Oven-Top Unit	Kitchen-Production	Blodgett Ovens	0.060	DFG-200-L-S	101900EA040T
562	Carrillo Dining Commons	Convection Oven-Bottom	Kitchen-Production	Blodgett Ovens	0.060	DFG-200-L-S	061201EA025B
562	Carrillo Dining Commons	Combi Oven (Bottom)	Kitchen-Production	Cleveland	0.068	OGS-6.20	11042300001121
562	Carrillo Dining Commons	Combi Oven - Top	Kitchen-Production	Cleveland	0.068	OGS-6.20	1105230000368
562	Carrillo Dining Commons	Griddle/Oven	Kitchen-American-	Jade	0.175	JTRH-36GT-36C	0000019143QV
860	Portola Dining Commons	Convection Oven/Range Top	Kitchen-Production	US Range Co	0.040		
860	Portola Dining Commons	Convection Oven	Kitchen-Production	Montague	0.160		
860	Portola Dining Commons	Convection Oven	Kitchen-Production	Montague	0.160		
860	Portola Dining Commons	DOUBLE CONVECTION OVEN	Kitchen-Production	Blodgett Ovens	0.060	090110RA002B	DFG 200
860	Portola Dining Commons	Convection Oven/Range Top	Kitchen-Production	US Range Co	0.080		
860	Portola Dining Commons	Convection Oven-Bottom	Kitchen-Production	Blodgett Ovens	0.060	DFG-200	090110RA002B
860	Portola Dining Commons	Convection Oven-Top	Kitchen-Production	Blodgett Ovens	0.060	DFG-200	090110RA001T
860	Portola Dining Commons	DOUBLE CONVECTION OVEN	Kitchen-Production	Blodgett Ovens	0.060	090110RA001T	DFG 200
860	Portola Dining Commons	Oven-Deck 3	Kitchen-Bakery	Garland	0.040		
860	Portola Dining Commons	Oven-Triple Stack Deck	Kitchen-Bakery	Southbend	0.156		
860	Portola Dining Commons	Oven-Deck 1	Kitchen-Bakery	Garland	0.040		
860	Portola Dining Commons	Oven-Deck 2	Kitchen-Bakery	Garland	0.040		
1861	New Portola Dining	Combi Oven	Kitchen	Cleveleand	0.076	OGS 6.20	
1861	New Portola Dining	Combi Oven	Kitchen	Cleveleand	0.076	OGS 6.20	
1861	New Portola Dining	Combi Oven	Kitchen	Cleveleand	0.076	OGS 6.20	
1861	New Portola Dining	Combi Oven	Kitchen	Cleveleand	0.076	OGS 6.20	
1861	New Portola Dining	Combi Oven	Kitchen	Cleveleand	0.076	OGS 6.20	
1861	New Portola Dining	Combi Oven	Kitchen	Cleveleand	0.076	OGS 6.20	
1861	New Portola Dining	Combi Oven	Kitchen	Cleveleand	0.076	OGS 6.20	
1861	New Portola Dining	Cooktop/Oven-4 Burner	Kitchen	Jade	0.175	JTRH-4-36	
1861	New Portola Dining	Stone Hearth Oven	Kitchen	Woodstone	0.123	WS-MS-7	
1861	New Portola Dining	Full Size Convection Oven	Kitchen	Jade	0.110	JCO-240b	
1861	New Portola Dining	Heavy Duty Range	Kitchen	Jade	0.175	MRH-4	
1861	New Portola Dining	Heavy Duty Range	Kitchen	Jade	0.175	MRH-4	
1861	New Portola Dining	Tandoor Oven	Kitchen	Woodstone	0.040	WS-GFT-31	
				Total	5.847		

Total Heat Input (MMBtu/hr)	5.847

Emission Factors (lb/MMBtu)					
NOx	ROC	CO	SOX	PM	GHG
0.09	0.01	0.04	0.01	0.01	117.00

short term emissions (lb/day)					
NOx	ROC	CO	SOx	PM	GHG
12.91	0.76	5.47	1.92	1.05	16418.10

Long Term Emissions (TPY)					
NOx	**ROC**	**CO**	**Sox**	**PM**	**GHG**
2.36	**0.14**	**1.00**	**0.35**	**0.19**	**2996.30**

EF based on AP42 emission factor estimates for furnaces with heat input < 0.3 MMBtu/hr
assuming operation 24hrs per day 365 hrs per year

UCSB Laboratory Solvent Emissions (APCD Rule 202.U)

DEV ID	Building	Building Name	Pollutant	Annual PTE (Tons/Yr)	Quarterly PTE (Tons/Qtr)
9201	408	NA	Reactive Organic Gas	0.0071	0.0018
9204	504	Bio Science Instruction Facility	Reactive Organic Gas	0.0424	0.0106
9205	539	Bio Science Annex	Reactive Organic Gas	0.0071	0.0018
9206	544	Nobel Hall	Reactive Organic Gas	0.0706	0.0177
9207	551	Psychology	Reactive Organic Gas	0.0021	0.0005
9208	555	Marine Science	Reactive Organic Gas	0.0989	0.0247
9209	560	Phelps Hall	Reactive Organic Gas	0.0028	0.0007
9210	569	Surge I	Reactive Organic Gas	0.0014	0.0003
9211	571	Biological Sciences II	Reactive Organic Gas	0.3815	0.0954
9212	588	Student Health	Reactive Organic Gas	0.0007	0.0002
9214	503	Engineering II	Reactive Organic Gas	0.1700	0.0425
9216	526	Geology	Reactive Organic Gas	0.0014	0.0003
9217	534	Arts	Reactive Organic Gas	0.0007	0.0002
9219	556	Engineering I	Reactive Organic Gas	0.0041	0.0010
9220	575	Cloud Laboratory	Reactive Organic Gas	0.0021	0.0005
9221	557	Chemistry	Reactive Organic Gas	0.3608	0.0902
9222	570	Surge II	Reactive Organic Gas	0.0021	0.0005
9224	565	Environmental Health & Safety	Reactive Organic Gas	0.0243	0.0061
9225	598	Chemical Bulk Storage	Reactive Organic Gas	0.0035	0.0009
9226	572	Broida Hall	Reactive Organic Gas	0.0104	0.0026
9227	546	Woodhouse	Reactive Organic Gas	0.0083	0.0021
9900	225	Engineering Science Building	Reactive Organic Gas	0.0193	0.0048
9901	235	Life Science Building	Reactive Organic Gas	0.1766	0.0442
9902	266	Elings (CNSI)	Reactive Organic Gas	0.0256	0.0064
9904	515	Humanities and Social Services	Reactive Organic Gas	0.0021	0.0005
9905	520	Marine Science Building	Reactive Organic Gas	0.1060	0.0265
9906	521	Bren School of Environmental Science and Management	Reactive Organic Gas	0.0111	0.0028
9907	563	Ellison	Reactive Organic Gas	0.0007	0.0002
9908	615	MRL	Reactive Organic Gas	0.0520	0.0130
9909	657	PSB North	Reactive Organic Gas	0.4232	0.1058
9910	672	PSB South	Reactive Organic Gas	0.0007	0.0002
			Total	**2.0191**	**0.5048**

Attachment 10.13. Draft Comments

10.13.1 Draft comments, if any are submitted, may be found in this section of the final permit.

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