

**SYNTHETIC MINOR OPERATING PERMIT
EVALUATION REPORT
NASA-AMES RESEARCH CENTER
PLANT NUMBER A0550
APPLICATION NUMBER 23438**

BACKGROUND

The NASA Ames Research Center (NASA Ames) is subject to the requirements of Title V of the federal Clean Air Act, Part 70 of Volume 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a major facility as defined by BAAQMD Regulation 2-6-212. NASA Ames is a major facility because it has the “potential to emit” more than 100,000 tons per year of greenhouse gases (GHG) and 100 tons per year of a regulated air pollutant. Major facilities that are willing to accept federally enforceable permit conditions that limit emissions to less than Title V thresholds can apply for a Synthetic Minor Operating Permit. Based on 2010 usage data, it is estimated that actual emissions at NASA Ames are well below major facility thresholds. Therefore, NASA Ames has elected to apply for a Synthetic Minor permit.

This permit will establish federally enforceable permit conditions to limit the facility to a maximum of 90,000 tons/yr of GHG and 95 tons/yr of regulated air pollutants. Synthetic Minor permits must have practically enforceable limits and conditions that ensure that emissions never exceed major facility thresholds. The permit may also contain limits and conditions that have been established pursuant to other BAAQMD rules and regulations but do not contribute to the synthetic minor limits.

SITE DESCRIPTION

NASA Ames occupies a combined area of 1,864 acres at the former Moffett Field Naval Air Station. Their infrastructure consists of office buildings, laboratories, fabrication shops, wind tunnels, utility facilities, and other ancillary structures such as aircraft hangers and maintenance facilities. The infrastructure supports research in the aeronautics, physical sciences, space exploration, earth systems, and life sciences. NASA has identified a total of 279 air emission sources throughout the facility. Of these, 95 sources currently have permits from the BAAQMD.

POTENTIAL TO EMIT

NASA Ames has completed an emissions inventory of all sources of air pollutants throughout their facilities. The inventory was separated into three categories: (1) combustion sources, (2) evaporative loss sources, and (3) miscellaneous sources.

In terms of potential to emit (PTE) the combustion source category is by far the largest of the three. Using EPA guidelines and EPA and BAAQMD emission factors and permit limits, NASA has estimated the PTE for combustion sources at the facility. These estimates are summarized below in Table 1.

Table 1: Potential to Emit – Combustion Sources

Source Type	Pollutant (tons/yr)					
	NOx	CO	PM	SOx	TOC	CO2e
Permitted Boilers/Heaters	49	5	0.43	17	21	147,251
Boilers/Heaters 2-10 MMBTU	48	40	4	0	5	57,535
Boilers/Heaters < 2 MMBTU	17	11	1	0	2	20,964
	114	56	5	17	28	225,750
Permitted Generators	75	147	3	1	6	6,200
Unpermitted Generators	6	58	0	0	2	58,448
	81	205	3	1	8	64,648
Total Combustion	195	261	8	18	36	290,398

Evaporative loss and miscellaneous sources make up the remainder of air emissions from the facility. All of these sources currently have BAAQMD permits. Potential emissions from these two categories are summarized below in Table 2.

Table 2: Potential to Emit – Evaporative Loss and Miscellaneous Sources

Source Type	Pollutant (tons/yr)					
	NOx	CO	PM	SOx	TOC	CO2e
Evaporative Loss Sources	0	0	0	0	18	0
Miscellaneous Sources	5.2	0	0.1	0	0.01	0
Total	5.2	0	0.1	0	18	0

Table 3 below, summarizes the total facility PTE in comparison to the Title V Major Source thresholds for each pollutant.

Table 3: Potential to Emit – Facility Wide

PTE Totals	Pollutant (tons/yr)					
	NOx	CO	PM	SOx	TOC	CO2e
Combustion	195	261	8	18	36	290,398
Evaporative Loss	0	0	0	0	18	0
Miscellaneous	5.2	0	0.1	0	0.01	0
Facility PTE	200	261	8	18	54	290,398
Major Source Thresholds	100	100	100	100	100	100,000

As demonstrated above, NASA Ames has a PTE for NOx, CO, and Greenhouse Gases as CO2 equivalent (CO2e) that exceeds the Major Source thresholds. However, the estimated actual emissions are significantly below both PTE and the Major Source thresholds. Therefore, NASA Ames is applying for a Synthetic Minor Operating Permit (SMOP).

Table 4 below, summarizes the actual emissions from the facility based on 2010 usage data.

Table 4: Estimated 2010 Actual Emissions – Facility Wide

PTE Totals	Pollutant (tons/yr)					
	NOx	CO	PM	SOx	TOC	CO2e
Combustion	17.7	14.6	1.2	0.2	1.7	24,096
Evaporative Loss	0	0	0	0	0.7	0
Miscellaneous	0.01	0	0.1	0	0.01	0
2010 Actual Emissions	17.7	14.6	1.3	0.2	2.4	24,096
Major Source Thresholds	100	100	100	100	100	100,000

SYNTHETIC MINOR OPERATING PERMIT

In order to be eligible for a synthetic minor permit, a site must either have a maximum potential to emit that is less than each Title V emission threshold (less than 95 tons/year of NO_x, CO, POC, PM₁₀, and SO₂, less than 9 tons/year of any single hazardous air pollutant (HAP), and less than 23 tons/year of all HAPs combined) or must accept conditions limiting the site to less than these emissions thresholds (Regulation 2-6-423). In addition, EPA has recently adopted Title V permitting thresholds for greenhouse gas (GHG) emissions that became effective for all sites on July 1, 2011. Any site that has the potential to emit more than 100,000 tons/year of greenhouse gases (expressed as CO₂ equivalent) will be deemed a major facility and required to obtain a Title V permit. To be eligible for a Synthetic Minor Operating Permit for greenhouse gas emissions, the emission threshold is 90% of the Title V emission threshold, or 90,000 tons/year of CO₂ equivalent emissions, or must accept conditions limiting the site to less than these emissions thresholds (Regulation 2-6-423.2.2).

NASA Ames has proposed the addition of federally enforceable throughput limitations such that NO_x and CO emissions will each be less than 95 tons/yr and CO₂e emissions will be less than 90,000 tons/yr. Compliance with these limits will be demonstrated on a rolling monthly basis through the use of an emission calculation procedure that applies a throughput to an established emission factor to each source or source group.

DETERMINATION OF EMISSIONS

NASA has created emission calculation spreadsheets for the following source categories: (1) External Combustion Sources, (2) Internal Combustion Sources, (3) Evaporative Loss Sources, and (4) Miscellaneous Sources. These tables were submitted with the SMOP application and are the basis of the potential to emit determination for the facility as well as the means of demonstrating on-going compliance with the SMOP emission limits. A discussion of the emissions estimation methodology for each category follows.

External Combustion Sources

External combustion sources include all permitted and unpermitted boilers and heaters and a small incinerator. All sources are fired by natural gas. The emissions from permitted sources are based on emissions factors in the BAAQMD databank; factors for non-permitted external

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combustion equipment were all taken from the appropriate section of EPA AP-42 (Ref. SMOP Application, Table B-1). CO_{2e} emissions are based on the following formula: [(CO₂) + (CH₄ x 21) + (N₂O x 310)]

NASA will use actual natural gas consumption data to determine emissions on a monthly basis. Separately metered sources will have emissions based on individual emission factors and actual fuel consumption; the combined emissions from all other sources will then be calculated based on the remainder of facility wide natural gas use and the highest applicable emission factors.

Internal Combustion Sources

This category includes all internal combustion equipment (piston engines and turbines) fired by any fuel. Emission factors from permitted sources are from the BAAQMD databank; factors for non-permitted equipment were taken from the manufacturer or when not available from the appropriate section of EPA AP-42 (Ref. SMOP Application, Table B-4). CO_{2e} emissions are based on the following formula: [(CO₂) + (CH₄ x 21) + (N₂O x 310)]

NASA records fuel consumption for all Internal Combustion Sources. Fuel use will be combined with emission factors to determine monthly emissions.

Evaporative Loss Sources

Evaporative loss sources include a number of miscellaneous solvent use and coating operations. The emissions from this category are composed entirely of VOC and are readily quantifiable through solvent use records. Table B-7 of the SMOP application summarizes the sources and emission factors for this category.

Because the PTE for POC (TOC) is well below the Title V threshold, no additional requirements for this category will be added to the SMOP.

Miscellaneous Sources

Miscellaneous sources are those that do not fit into any of the other three categories. They include Research Operations a, small Tub Grinder, and an Ethylene Oxide Sterilizer. Table B-9 of the SMOP application summarizes the sources and emission factors for this category.

Four permitted research operations known as the “Arc-Jet Facilities” are NO_x sources and are subject to the facility-wide SMOP NO_x limit. These sources have existing NO_x limits under Permit Condition #10712. The other two sources in the “miscellaneous” category emit only PM and POC and are therefore not subject to SMOP limits. No additional requirements for this category will be added to the SMOP.

SYNTHETIC MINOR OPERATING PERMIT CONDITIONS

Synthetic Minor Operating Permit Conditions will be added as follows to ensure that the facility will continue to meet the requirements set out in 40 CFR Part 60.752(d) to avoid designation as a Title V facility.

SYNTHETIC MINOR OPERATING PERMIT

NASA-Ames Research Center
Moffett Field, CA 94035
Application #23438
Plant #550

This facility, Site # A550, has a synthetic minor operating permit. This operating permit covers all sources of regulated air pollutants existing at this facility as of permit issuance.

The following conditions establish the federally enforceable permit terms that ensure this plant is classified as a Synthetic Minor Facility under District Regulation 2, Rule 6, Major Facility Review, and ensure it is not subject to the permitting requirements of Title V of the Federal Clean Air Act as amended in 1990 and 40 CFR Part 70. All applications submitted by the applicant and all modifications to the plant's equipment after issuance of the synthetic minor permit must be evaluated to ensure that the facility will not exceed the synthetic minor general limits below, and that sufficient monitoring, recordkeeping, and reporting requirements are imposed to ensure enforceability of the limits.

Any revision to a condition establishing this plant's status as a Synthetic Minor Facility or any new permit term that would limit emissions of a new or modified source for the purpose of maintaining the facility as a synthetic minor must undergo the procedures specified by Rule 2-6, section 423. The basis for the synthetic minor conditions is an emission limit of 95 tons per year for regulated air pollutants, of 90,000 tons per year for greenhouse gases (on a CO₂ equivalent basis), an emission limit for a single hazardous air pollutant of 9 tons per year, and an emission limit for a combination of hazardous air pollutants of 23 tons per year.

1. In no event shall the emissions from this site exceed any of the emission limits listed below. (Basis: Regulation 2-6-423)

NO _x	95 tons/year
CO	95 tons/year
POC	95 tons/year
PM ₁₀	95 tons/year
SO ₂	95 tons/year
Any Single HAP	9 tons/year
Combination of HAPs	23 tons/year
CO _{2e}	90,000 tons/year

NASA-Ames Research Center has successfully demonstrated that the facility wide potential to emit POC, PM₁₀, SO₂ and HAPs are below the Title V emissions thresholds. However, the potential to emit NO_x, CO, and CO_{2e} is above Title V emissions thresholds and is subject to additional monitoring under the synthetic minor operating permit.

2. NASA-Ames Research Center shall demonstrate compliance with the emission limits for NO_x, CO, and CO_{2e} as outlined below:
 - a. External Combustion Sources: All natural gas fired external combustion sources including all permitted and unpermitted boilers, heaters, and other external combustion devices. Unless otherwise approved by the BAAQMD, emission factors for NO_x, CO, and CO_{2e} shall be those submitted in Table B-1 of the SMOP application. Natural gas consumption applied to emission factors shall be actual metered throughput. Sources without a dedicated fuel meter shall be grouped together and linked to a main fuel meter in such a way as to determine the entire fuel use for the group. The highest applicable NO_x, CO, and CO_{2e} emissions factors for any source in the group shall be applied to the entire group.
 - b. Internal Combustion Sources: All internal combustion equipment (piston engines and turbines) fired by any fuel. Unless otherwise approved by the BAAQMD, emission factors for NO_x, CO, and CO_{2e} shall be those submitted in Table B-4 of the SMOP application. Fuel consumption shall be based on actual usage for each source in this category.
 - c. Miscellaneous Sources: All NO_x sources that do not fit into any of the previous two categories. In general, these are research operations that produce NO_x, without the combustion of a hydrocarbon fuel. Unless otherwise approved by the BAAQMD, emission factors for NO_x shall be those submitted in Table B-9 of the SMOP application.

Emissions of NO_x, CO, and CO_{2e} from each source or source group shall be calculated and recorded on a monthly basis. Annual emissions shall be summarized on a rolling 12-month basis. All records required by the SMOP shall be kept on site and be available for inspection by BAAQMD personnel for at least 5 years from the date that a record was made. (Basis: Regulation 2-6-423)

3. NASA-Ames Research Center shall develop and maintain monitoring tables to clearly demonstrate compliance with the NO_x, CO, and CO_{2e} SMOP limits on a rolling 12-month basis beginning with the first calendar month after the issuance of the SMOP. All monitoring tables shall be updated as applicable when equipment is added to or removed from the facility. NASA-Ames Research Center has the authority under the SMOP to make additions and deletions to equipment in the approved monitoring tables without prior approval of the BAAQMD provided that approved emissions factors and monitoring methodologies are followed. The BAAQMD has the authority at any time to require modifications to the monitoring tables as deemed necessary to improve the accuracy or clarity of monitored data. (Basis: Regulation 2-6-423)

RECOMMENDATION

The District is proposing to issue a Synthetic Minor Operating Permit to Site #A0550. In accordance with SIP Regulation 2-6-423.3, this preliminary decision is subject to a 30 day public comment permit. At the conclusion of the comment period, the District will make a final decision on this matter after considering any comments received.

By: _____
Ted Hull
Senior Air Quality Engineer

Date: _____

APPENDIX 1:

Table B-1: External Combustion Sources Emission Factors

SMOP EVALUATION REPORT: NASA-AMES RESEARCH CENTER, PLANT #A0550, Application 23438

Emission Calculations for External Combustion Sources Under BAAQMD Air Permits

Source #:	Bldg #:	Emissions Unit Description	Make	Model	mmBtu/hr	NOx EF	CO EF	PM EF	SO2 EF	TOC EF	CO2 EF	CH4 EF	N2O EF	GHG EF	EF Units	EF Source
48	234	Arc Jet Boiler			255	3.60E-02	4.00E-02	3.00E-03	5.68E-04	1.92E-03	1.22E+02	1.90E-03	2.31E-04	1.22E+02	lb/Mcf	BAAQMD + Permit Limit of 233,380 MMBtu/rolling 12-month
236	236	ANIMAL RESEARCH INCINERATOR			1.6	1.40E-01	3.50E-02	3.00E-03	5.68E-04	5.72E-03	1.22E+02	1.93E-03	2.31E-04	1.22E+02	lb/Mcf	BAAQMD
4002	10	BOILER, STEAM #1	Hurst	96-122	22	3.60E-02	3.50E-02	3.00E-03	5.68E-04	5.72E-03	1.22E+02	1.90E-03	2.31E-04	1.22E+02	lb/Mcf	BAAQMD
4003	10	BOILER, SYS. STEAM #2	Hurst	99-169	10.5	3.60E-02	3.50E-02	3.00E-03	5.68E-04	5.72E-03	1.22E+02	1.90E-03	2.31E-04	1.22E+02	lb/Mcf	BAAQMD

Emission Calculations for External Combustion Sources with No BAAQMD Air Permits

Source #:	Bldg #:	Emissions Unit Description	Make	Model	mmBtu/hr	NOx EF	CO EF	PM EF	SO2 EF	TOC EF	CO2 EF	CH4 EF	N2O EF	GHG EF	EF Units	EF Source
	146	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	146	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	146	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	146	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	204	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	204	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	204	SPACE HEATER	Modine		0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	218	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	554	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	554	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	554	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	554	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	554	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	554	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	229	SPACE HEATER	TRANE	GPA-75A	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	229	SPACE HEATER	JANITROL	67-085	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	229	SPACE HEATER	TRANE	GPA-75A	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	229	SPACE HEATER	JANITROL	GP80C, WALL	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu

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Source #:	Bldg #:	Emissions Unit Description	Make	Model	mmBtu/hr	NOx EF	CO EF	PM EF	SO2 EF	TOC EF	CO2 EF	CH4 EF	N2O EF	GHG EF	EF Units	EF Source
	229	SPACE HEATER	JANITROL	GP80C, WALL	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	229	SPACE HEATER	JANITROL	67-085	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	211	BOILER, HEAT STEAM, LOW PRESS, NAT-GAS, 250 HP STEAM	Cleaver Brooks	CBI 700-250	8.9856	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	236	BOILER, HEAT SYS., STEAM	CLEAVER BROOKS	CB 700-200	8.369	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	200	BOILER, HEAT SYS., STEAM	Ocean Shore	D2-187	6.3	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	227	BOILER, HEAT SYS., STEAM	SUPERIOR BOILER WORKS	4-5-751	6.3	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	239	BOILER, HEAT SYS., HOT WATER #2	BURNHAM RAY	WB3-15	6.28	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	229	BOILER, HEAT SYS., HOT WATER	CLEAVER BROOKS	CB700-150	6.277	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	239	BOILER, HEAT SYS., HOT WATER #1	CLEAVER BROOKS	M4W-600075	6	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	243	BOILER, HOT WATER #2	Cleaver Brooks	FLX 700	6	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	267	SPACE HEATER	TRANE	GDPD022EFC1000K	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	267	SPACE HEATER	TRANE	GDPD022EFC1000K	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	213	BOILER, HEAT SYS., HOT WATER	Bryan Flexible Tube Boilers	RV550-RDG-WLX	5.5	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	237	BOILER, HEAT SYS., HOT WATER	CLEAVER BROOKS	CB 700-100	4.184	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	55	BOILER, HEAT SYS., STEAM	Burnham	3P-200-SPL.LB	4.184	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	55	BOILER, HEAT SYS. STEAM	Burnham	3P-200-SPL.LB	4.184	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	262	BOILER, HEAT SYS., HOT WATER	AJAX Boiler Inc.	WGM- 4000	4	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	234	SPACE HEATER	REZNOR ITT		0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	234	SPACE HEATER	REZNOR ITT		0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	234	AUXILIARY BOILER			0.1868	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu

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Source #:	Bldg #:	Emissions Unit Description	Make	Model	mmBtu/hr	NOx EF	CO EF	PM EF	SO2 EF	TOC EF	CO2 EF	CH4 EF	N2O EF	GHG EF	EF Units	EF Source
	262	BOILER, HEAT SYS., HOT WATER	AJAX Boiler Inc.	WGM-4000	4	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	245	BOILER HOT WATER	BRYAN	RV350-W-FDG	3.5	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	220	BOILER HOT WATER	CLEAVER BROOKS	FLX 700	3.5	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	244	BOILER, HOT WATER	UNIVERSAL ENERGY CORP	BF60L	3.3475	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	14	WATER HEATER	AO SMITH	FSG40212	3	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	202	BOILER, HEAT SYS., STEAM	Kewanee	M-205-G	2.563	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	242	BOILER, HOT WATER	UNIVERSAL ENERGY CORP.	BF60L	2.52	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	211	BOILER, HEAT SYS., HOT WATER	Bryan	AB 520-W-FDG-LX	2.5	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
54	212	BOILER, HEAT SYS., HOT WATER	Rite	225	2.25	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	240	BOILER, HEAT SYS., HOT WATER	RITE ENG CO	225WG	2.25	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	241	BOILER, HEAT SYS., HOT WATER	AJAX BOILER	WGDF-2250	2.25	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	233	BOILER, HEAT SYS., HOT WATER	Fulton Gas Fired Pulse Combustion Boiler	PHW-2000	2	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	207	BOILER, HEAT SYS., STEAM	Cleaver Brooks	FLX 700	2	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	226	BOILER, STEAM	BRYAN	AB200-S-15-FDG	2	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	583	BOILER, HOT WATER	RAYPAK	H3-1826A-EHCRCOA	1.8256	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	227	SPACE HEATER	State Industries, Inc.	ES652DORTG	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu/hr
	206	BOILER, HOT WATER	RITE STEAM BLOWER	180WG0	1.8	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	258	BOILER, HEAT SYS., HOT WATER	RITE	180	1.8	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr

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Source #:	Bldg #:	Emissions Unit Description	Make	Model	mmBtu/hr	NOx EF	CO EF	PM EF	SO2 EF	TOC EF	CO2 EF	CH4 EF	N2O EF	GHG EF	EF Units	EF Source
	233	BOILER, HEAT SYS., HOT WATER	Kewanee	M-135-G	1.688	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	203	BOILER, HEAT SYS., HOT WATER	Hurst	HTE3G189-A05	1.6	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	261	BOILER, HEAT SYS., HOT WATER	AJAX BOILER	WGFD-1500	1.5	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	240	BOILER, HEAT SYS., HOT WATER	RITE ENG CO	150NGO	1.5	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	215	BOILER, HOT WATER	Weil-McLain	688	1.358	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	20	BOILER, HEAT SYS., STEAM	AJAX BOILER	SGX-1250	1.23	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	15	BOILER, HOT WATER	Bryan Flexible Tube Boilers	AB120-W-FDG-GLX	1.2	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	257	BOILER, HEAT SYS., HOT WATER	TELEDYNE	PH0850IN09K1ACX	0.85	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	158	BOILER, HEAT SYS., STEAM	AJAX BOILER & HEATER CO	SGXB-1050-D	0.84	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	109	POOL HEATER	LAARS Heating Systems Company	PNCP0750NACC2B XN	0.74997	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	210	BOILER, HEAT SYS., HOT WATER #1	Bryan	D650-W-FDG	0.65	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	210	BOILER, HEAT SYS., HOT WATER #2	Bryan	D650-W-FDG	0.65	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	235	WATER HEATER	Ventura Low NOx Water Heater	54V 250A-MXL	0.54	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	204	BOILER, HEAT SYS., HOT WATER	RITE ENG CO	48G0	0.48	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	219	BOILER, HEAT SYS., HOT WATER	BRYAN	D-450-W-FDGO	0.45	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	239	WATER HEATER	A.O. SMITH	BTR 400 110	0.399	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	239	WATER HEATER	A.O. SMITH	BTR 400 110	0.399	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	238	BOILER, HEAT SYS., HOT WATER	PEERLESS	GO-704-FD-WUP	0.3826	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr

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Source #:	Bldg #:	Emissions Unit Description	Make	Model	mmBtu/hr	NOx EF	CO EF	PM EF	SO2 EF	TOC EF	CO2 EF	CH4 EF	N2O EF	GHG EF	EF Units	EF Source
	248	NATURAL GAS HEATER	Hotsy Corporation	994A	0.35	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	580	BOILER, HEAT SYS., HOT WATER	Teledyne Laars		0.329	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	211	WATER HEATER	AO SMITH	BTR305-104	0.305	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42 Section 1.4: 0.3 - 100 MMBtu/hr
	223	BOILER, HEAT SYS., HOT WATER - GAS	Bryan Boilers	HECL3MM-W-150-FDG	0.3	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	945	WATER HEATER	Bradford- White Corporation	D75T3003N	0.3	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	260	NATURAL GAS BOILER	Ajax Boiler & Heater Co.	WG-250 S	0.25	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	12	WATER HEATER	A.O. Smith Water Products Co.	BTR 250 110	0.25	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	12	WATER HEATER	A.O. Smith water Products Co.	BTC 250 970	0.25	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	20	WATER HEATER	A.O. SMITH	BTC250920	0.25	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	20	WATER HEATER	A.O. SMITH	BTC250920	0.25	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	566	BOILER, HEAT SYS., HOT WATER	BRYAN	F-25OW	0.2	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	109	WATER HEATER	State	SBF100199NESTP	0.19999	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	240	WATER HEATER	American Water Heater Co.	DCG3-100T199-6N	0.199	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	213	WATER HEATER	A.O. Smith Master Fit	BTR 180 104	0.18	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	223	WATER HEATER	A.O. Smith Commercial	BTC 154920	0.154	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	3	WATER HEATER	AO SMITH	BTR154110	0.154	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	226	WATER HEATER	A.O. Smith	BTR 120 118	0.12	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	239	SPACE HEATER	DAYTON ELECTRIC	3E367A	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	239	SPACE HEATER	MODINE	PD 50AE0130	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	239	SPACE HEATER	REZNOR ITT	F-25-E	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	239	SPACE HEATER	MODINE	P-50-A	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	235	SPACE HEATER	STERLING		0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	211	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	211	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	260	SPACE HEATER	LAMBERT INC	L-60	0.52	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP 42, Tables 1.4-1 and 1.4-2

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Source #:	Bldg #:	Emissions Unit Description	Make	Model	mmBtu/hr	NOx EF	CO EF	PM EF	SO2 EF	TOC EF	CO2 EF	CH4 EF	N2O EF	GHG EF	EF Units	EF Source
	211	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	211	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	211	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	211	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	262	WATER HEATER	State Sand Blaster	SBN71120NE	0.12	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	262	WATER HEATER	State Sand Blaster	SBT 75 120 NE8F	0.12	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	359	Propane Water Heater	Bosch	GWH 425 HN L	0.105	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	934	WATER HEATER	American Water Heater Company	G62-100T88-4NOX	0.085	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	260	SPACE HEATER	LAMBERT INC	L-60	0.52	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Tables 1.4-1 and 1.4-2
	260	SPACE HEATER	LAMBERT INC	L-60	0.52	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Tables 1.4-1 and 1.4-2
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	239	SPACE HEATER	MODINE	P-50-A	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu

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Source #:	Bldg #:	Emissions Unit Description	Make	Model	mmBtu/hr	NOx EF	CO EF	PM EF	SO2 EF	TOC EF	CO2 EF	CH4 EF	N2O EF	GHG EF	EF Units	EF Source
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	TRANE	1B3D4EB11130112	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	246	SPACE HEATER	PANEL BLOCK	CRH-125-3T	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	258	WATER HEATER	A.O Smith	BT-80-110	0.076	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	15	WATER HEATER	Rheem Mfg. Co.	6E741	0.0755	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	237	WATER HEATER	STATE	SBS7576NE 300	0.0751	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	596	WATER HEATER	American Water Heater Co.	G62-75T75-4NOV	0.0751	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	250	SPACE HEATER	REZNOR ITT	UA-100 SERIES 1	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	250	SPACE HEATER	REZNOR ITT	UA-100 SERIES 1	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	245	WATER HEATER - NATURAL GAS	STATE	SBS7576NE	0.0751	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	251	SPACE HEATER	PERFECTION-SCHWANK	JK37-70SSAN	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	251	SPACE HEATER	PERFECTION-SCHWANK	JK37-70SSAN	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	251	SPACE HEATER	PERFECTION-SCHWANK	JK37-70SSAN	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	251	SPACE HEATER	DAYTON TEEL		0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	251	SPACE HEATER	PERFECTION-SCHWANK	JK37-70SSAN	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	251	SPACE HEATER	PERFECTION-SCHWANK	JK37-70SSAN	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	251	SPACE HEATER	PERFECTION-SCHWANK	JK37-70SSAN	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	251	SPACE HEATER	PERFECTION-SCHWANK	JK37-70SSAN	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	251	SPACE HEATER	PERFECTION-SCHWANK	JK37-70SSAN	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	251	SPACE HEATER	PERFECTION-SCHWANK	JK37-70SSAN	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	251	SPACE HEATER	PERFECTION-SCHWANK	JK37-70SSAN	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	260	SPACE HEATER	LAMBERT INC	L-60	0.52	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP 42, Tables 1.4-1 and 1.4-2
	260	SPACE HEATER	LAMBERT INC	L-60	0.52	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP 42, Tables 1.4-1 and 1.4-2
	260	SPACE HEATER	LAMBERT INC	L-60	0.52	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP 42, Tables 1.4-1 and 1.4-2
	260	SPACE HEATER	LAMBERT INC	L-60	0.52	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP 42, Tables 1.4-1 and 1.4-2
	260	SPACE HEATER	LAMBERT INC	L-60	0.52	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP 42, Tables 1.4-1 and 1.4-2

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Source #:	Bldg #:	Emissions Unit Description	Make	Model	mmBtu/hr	NOx EF	CO EF	PM EF	SO2 EF	TOC EF	CO2 EF	CH4 EF	N2O EF	GHG EF	EF Units	EF Source
	260	SPACE HEATER	LAMBERT INC	L-60	0.52	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Tables 1.4-1 and 1.4-2
	260	SPACE HEATER	LAMBERT INC	L-60	0.52	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Tables 1.4-1 and 1.4-2
	260	SPACE HEATER	LAMBERT INC	L-60	0.52	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Tables 1.4-1 and 1.4-2
	260	SPACE HEATER	LAMBERT INC	L-60	0.52	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Tables 1.4-1 and 1.4-2
	260	SPACE HEATER	LAMBERT INC	L-60	0.52	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Tables 1.4-1 and 1.4-2
	260	SPACE HEATER	LAMBERT INC	L-60	0.52	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Tables 1.4-1 and 1.4-2
	260	SPACE HEATER	LAMBERT INC	L-60	0.52	1.00E+02	8.40E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Tables 1.4-1 and 1.4-2
	251	WATER HEATER	AMERICAN	FG6240T403NO	0.075	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	261	WATER HEATER	ACE BOILER	B3G	0.075	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	251	WATER HEATER	CARRIER	WEATHER MAKER 8000	0.053	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	260	WATER HEATER	American Water Heater Co.	FG6250T504NO	0.05	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	17	WATER HEATER	American Water Heater Co.	BFG6140T403NO	0.04	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	26	WATER HEATER	STATE INDUSTRIES	GS630YBRTG	0.04	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	202	WATER HEATER	American Water Heater Co.	FG6240T403NO	0.04	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	10	WATER HEATER	A.O. Smith	GVR 30 100	0.04	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	204	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	213	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	213	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	213	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	26	WATER HEATER	State Select	GS630YBRTG	0.04	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	204	SPACE HEATER	Modine		0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	203	WATER HEATER	Vanguard	3WA56	0.04	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	16	WATER HEATER	A.O. SMITH	CTG 40 226	0.038	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	510	WATER HEATER	A. O. SMITH	FSGH30224E	0.038	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	144	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	144	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	144	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	144	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu

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Source #:	Bldg #:	Emissions Unit Description	Make	Model	mmBtu/hr	NOx EF	CO EF	PM EF	SO2 EF	TOC EF	CO2 EF	CH4 EF	N2O EF	GHG EF	EF Units	EF Source
	144	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	144	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	144	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	144	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	144	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	204	WATER HEATER	A.O. Smith Water Heater		0.038	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	533	WATER HEATER	Bradford- White Corporation	M-4-30T5LN- 6	0.032	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	14	WATER HEATER	RHEEM	22J-40-5	0.032	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	200	WATER HEATER	General Electric	GG40S6XC00	0.032	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	359	Propane Space Heater	Dayton	3E 379E	0.03	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	144	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	234	WATER HEATER	American Water Heater Co.	FG6130T30NO	0.03	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	144	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	144	SPACE HEATER			0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	127	WATER HEATER	American Water Heater Company	BFG6130T303NOH	0.03	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	270	WATER HEATER	BRADFORD - WHITE	TW375S76B3N	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	241	WATER HEATER	TAKAGI	FLASH TK2	0.185	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	221	WATER HEATER	STATE INDUSTRIES	BTN 120 108	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	220	WATER HEATER	A.O. SMITH	BTN 120 108	0.12	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu
	202	WATER HEATER	American Meter Co.	FG6FG6130T303N0	0.15	9.40E+01	4.00E+01	7.60E+00	6.00E-01	1.10E+01	1.20E+05	2.30E+00	2.20E+00	1.21E+05	lb/MMcf	AP-42, Section 1.4, <0.3 MMBtu

Note:
GHG EF is calculated using the IPCC Second Assessment Report Global Warming Potentials.

APPENDIX 2:

Table B-4: Internal Combustion Sources Emission Factors

SMOP EVALUATION REPORT: NASA-AMES RESEARCH CENTER, PLANT #A0550, Application 23438

NOx Emission calculations for Internal Combustion Engines under BAAQMD air permits (no exempt permits)															
Source #:	Bldg #:	Emissions Unit Description	HP	Max fuel rate (thou gal/hr)	mmBtu/hr	NOx EF	CO EF	PM EF	SO2 EF	TOC EF	CO2 EF	CH4 EF	N2O EF	EF Units	EF Source
1001	213	EMERGENCY DIESEL GENERATOR	67	0.0049		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.22E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1002	258	EMERGENCY DIESEL GENERATOR	67	0.0049		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.22E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1003	263	EMERGENCY DIESEL GENERATOR	268	0.0195		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.22E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1004	241	EMERGENCY DIESEL GENERATOR	107	0.0078		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.22E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1005	105	EMERGENCY DIESEL GENERATOR	671	0.0488		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.22E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1006	580	EMERGENCY DIESEL GENERATOR	80	0.0058		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.22E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1007	158	EMERGENCY DIESEL GENERATOR	208	0.0151		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.22E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1008	223	EMERGENCY DIESEL GENERATOR	67	0.0049		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.22E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1009	12	EMERGENCY DIESEL GENERATOR	67	0.0049		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.22E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1010	236	EMERGENCY DIESEL GENERATOR	101	0.0073		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.22E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1013	Portable	Portable Diesel Engine, emergency standby	537	3.91E-02		2.09E+02	2.58E+02	1.21E+01	2.18E-01	2.93E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1014	Portable	Portable Diesel Engine, emergency standby	148	0.0108		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.22E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1015	Portable	Portable Diesel Engine, emergency standby	80	0.0058		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.22E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1017	Portable	Gas Turbine Air Starter unit AM 32-60A	80	0.003		6.78E+01	1.54E+01	5.00E+00	7.25E+00	5.57E+00	2.11E+04	5.20E-01	1.88E-01	lb/Mgal	BAAQMD
1018	Portable	Gas Turbine Air Starter unit AM 32-60A	80	0.003		6.78E+01	1.54E+01	5.00E+00	7.25E+00	5.57E+00	2.11E+04	5.20E-01	1.88E-01	lb/Mgal	BAAQMD
1021	Portable	Gasoline IC Engine, Backup Power unit	109	0.0041		1.88E+02	2.40E+03	1.34E+00	7.25E+00	8.61E+00	1.96E+04	8.06E-01	1.60E-01	lb/Mgal	BAAQMD
1022	Portable	Gasoline IC Engine, Backup Power unit	109	0.0041		1.88E+02	2.40E+03	1.34E+00	7.25E+00	8.61E+00	1.96E+04	8.06E-01	1.60E-01	lb/Mgal	BAAQMD
1023	Portable	Gas Turbine Air Starter unit AM 32-60A	80	0.003		6.78E+01	1.54E+01	5.00E+00	7.25E+00	5.57E+00	2.11E+04	5.20E-01	1.88E-01	lb/Mgal	BAAQMD
1026	Portable	Gasoline IC Engine, Back Power Unit	109	0.0041		1.88E+02	2.40E+03	1.34E+00	7.25E+00	8.61E+00	1.96E+04	8.06E-01	1.60E-01	lb/Mgal	BAAQMD
1027	254	EMERGENCY DIESEL GENERATOR	469	0.0272		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.22E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1030	239	EMERGENCY DIESEL GENERATOR	317	0.007	0.98	4.78E+02	1.02E+02	3.35E+01	2.18E-01	3.22E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1031	239	EMERGENCY DIESEL GENERATOR	535	0.0278	1.46	4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.22E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1032	Gate 14	EMERGENCY DIESEL WATER PUMP	110	0.0074		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.68E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1033	Gate 14	EMERGENCY DIESEL WATER PUMP	110	0.0074		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.68E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1035	244	EMERGENCY NATURAL GAS GENERATOR	201	1.47	1.47	3.40E+00	4.30E-01	1.00E-02	5.68E-04	1.38E+00	1.22E+02	1.37E+00	2.31E-04	lb/thou cu ft	BAAQMD
1036	244	EMERGENCY NATURAL GAS GENERATOR	101	0.84	0.84	3.40E+00	4.30E-01	1.00E-02	5.68E-04	1.38E+00	1.22E+02	1.37E+00	2.31E-04	lb/thou cu ft	BAAQMD
1037	Portable	Gasoline-Powered Engine on a Hydro-Sewer Flusher	99	0.003		3.63E+02	2.30E+02	1.47E+01	1.95E+01	4.36E+02	1.96E+04	8.06E-01	1.60E-01	lb/Mgal	BAAQMD
1038	245	EMERGENCY DIESEL GENERATOR	71	0.7		3.40E+00	4.30E-01	1.00E-02	5.68E-04	1.38E+00	1.22E+02	1.37E+00	2.31E-04	lb/thou cu ft	BAAQMD
1039	Portable	Portable Diesel Powered Air Compressor	69	0.003		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.68E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1040	Portable	Portable Diesel Powered Air Compressor	250	0.013		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.68E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1041	Portable	Portable Diesel Powered Roto-Tiller	177	0.009		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.68E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1043	Portable	Portable Standby Emergency Generator Set	325	0.017		1.16E+02	1.01E+02	5.02E+00	2.18E-01	5.39E+00	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1044	240	EMERGENCY DIESEL GENERATOR	237	0.0117		1.14E+02	4.33E+01	5.99E+00	7.25E-01	5.27E+00	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1046	Portable	Portable Water Pump stored at N127	225	0.0112		2.88E+02	5.27E+01	8.86E+00	2.18E-01	2.14E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1047	Portable	Portable Water Pump stored at N127	71	0.0035		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.68E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1048	Portable	Portable Water Pump stored at N127	71	0.0035		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.68E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1049	16	EMERGENCY DIESEL GENERATOR	158	0.008		1.05E+02	4.87E+01	8.12E+00	7.25E-01	4.80E+00	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1050	Portable	Portable Standby Diesel Genset-Water Purification	115	0.0057		1.07E+02	4.98E+01	8.29E+00	7.25E-01	4.92E+00	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1051	Portable	Portable Water Pump Diesel IC Engine - N127	170	0.01		2.02E+02	2.62E+01	7.87E+00	2.18E-01	1.05E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1053	Portable	Portable Diesel Generator Set (Flight Line Opns)	240	0.0105		1.32E+02	6.01E+01	6.39E+00	7.25E-01	6.23E+00	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD

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Source #:	Bldg #:	Emissions Unit Description	HP	Max fuel rate (thou gal/hr)	mmBtu/hr	NOx EF	CO	PM	SO2	TOC	CO2 EF	CH4 EF	N2O EF	EF Units	EF Source
1054	Portable	Diesel IC Engine, Portable Backup Power Unit	97	0.004		4.69E+02	1.02E+02	3.35E+01	2.18E-01	3.22E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
1445	56	EMERGENCY DIESEL GENERATOR	99	0.0051		1.79E+02	3.19E+01	9.89E+00	2.18E-01	8.69E+00	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
2152	215	EMERGENCY DIESEL GENERATOR	190	0.0085		3.06E+02	2.82E+01	5.88E+00	2.18E-01	4.86E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
2210	221	Emergency Fire Pump Diesel Engine Driver	530	0.027		3.80E+02	8.06E+01	7.01E+00	2.18E-01	9.66E+00	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
2211	221	Emergency Fire Pump Diesel Engine Driver	530	0.027		3.80E+02	8.06E+01	7.01E+00	2.18E-01	9.66E+00	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
2272	227	DIESEL PRIME GENERATOR	347	0.018		3.06E+02	6.18E+01	6.39E+00	2.18E-01	2.05E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
2273	227	DIESEL PRIME GENERATOR	347	0.018		3.06E+02	6.11E+01	6.39E+00	2.18E-01	2.05E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
2330	233	EMERGENCY DIESEL GENERATOR	1501.9	0.07		1.81E+02	5.64E+01	4.59E+00	2.18E-01	8.79E+00	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
2540	254	EMERGENCY DIESEL GENERATOR	757	0.0373		2.80E+02	2.00E+01	1.00E+01	2.18E-01	1.60E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
2610	261	EMERGENCY DIESEL GENERATOR	99	0.0051		1.97E+02	3.73E+01	5.88E+00	2.18E-01	1.13E-01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD
2671	Portable	Duratech HD-10/0.75 cu.yd. Tub Grinder	300	0.0161		2.83E+02	3.49E+02	1.64E+01	2.18E-01	4.03E+01	2.23E+04	8.92E-01	1.78E-01	lb/Mgal	BAAQMD

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NOx Emission calculations for Internal Combustion Engines with no BAAQMD air permits or exempt BAAQMD permits															
Source #:	Bldg #:	Emissions Unit Description	HP	Max fuel rate (thou gal/hr)	mmBtu/hr	NOx EF	CO	PM	SO2	TOC	CO2 EF	CH4 EF	N2O EF	EF Units	EF Source
Exempt	510	EMERGENCY PROPANE GENERATOR	31.9		0.2233	8.3	21.5	9.91E-03	5.88E-04	1.2	1.35E+02	6.60E-03	1.32E-03	g/HP-hr for NOx, CO, TOC lb/MMBTU for PM and SO2 lb/MMBTU for CO2, CH4, N2O	Manufacturer for NOx, CO, TOC AP42 Section 3.2 Table 3.2-2 for PM and SO2 EPA Mandatory Reporting Rule, Table C-1, Table C-2 for CO2, CH4 and N2O
Exempt	55	EMERGENCY DIESEL GENERATOR	15.6	0.00078	0.1092	0.031	6.68E-03	2.20E-03	2.05E-03	2.47E-03	2.23E+04	8.92E-01	1.78E-01	g/HP-hr for NOx, CO, PM, SO2, TOC lb/Mgal for CO2, CH4, N2O	AP42 Volume 1 Section 3.3, table 3.3-1 for NOx, CO, PM, SO2, TOC BAAMQD for CO2, CH4, N2O
Exempt	211	EMERGENCY DIESEL GENERATOR	13.59	0.0006795	0.09513	0.031	6.68E-03	2.20E-03	2.05E-03	2.47E-03	2.23E+04	8.92E-01	1.78E-01	g/HP-hr for NOx, CO, PM, SO2, TOC lb/Mgal for CO2, CH4, N2O	AP42 Volume 1 Section 3.3, table 3.3-1 for NOx, CO, PM, SO2, TOC BAAMQD for CO2, CH4, N2O
Exempt	245	EMERGENCY DIESEL GENERATOR	40.8	0.00204	0.2856	0.031	6.68E-03	2.20E-03	2.05E-03	2.47E-03	2.23E+04	8.92E-01	1.78E-01	g/HP-hr for NOx, CO, PM, SO2, TOC lb/Mgal for CO2, CH4, N2O	AP42 Volume 1 Section 3.3, table 3.3-1 for NOx, CO, PM, SO2, TOC BAAMQD for CO2, CH4, N2O
Exempt	454	EMERGENCY DIESEL GENERATOR	20.4	0.00102	0.1428	0.031	6.68E-03	2.20E-03	2.05E-03	2.47E-03	2.23E+04	8.92E-01	1.78E-01	g/HP-hr for NOx, CO, PM, SO2, TOC lb/Mgal for CO2, CH4, N2O	AP42 Volume 1 Section 3.3, table 3.3-1 for NOx, CO, PM, SO2, TOC BAAMQD for CO2, CH4, N2O
Exempt	780	EMERGENCY DIESEL GENERATOR	40.8	0.00204	0.2856	0.031	6.68E-03	2.20E-03	2.05E-03	2.47E-03	2.23E+04	8.92E-01	1.78E-01	g/HP-hr for NOx, CO, PM, SO2, TOC lb/Mgal for CO2, CH4, N2O	AP42 Volume 1 Section 3.3, table 3.3-1 for NOx, CO, PM, SO2, TOC BAAMQD for CO2, CH4, N2O

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Source #:	Bldg #:	Emissions Unit Description	HP	Max fuel rate (thou gal/hr)	mmBtu/hr	NOx EF	CO	PM	SO2	TOC	CO2 EF	CH4 EF	N2O EF	EF Units	EF Source
1042 EXEMPT	Portable	Portable Gasoline Powered Welder	1	0.0055		1.88E+02	2.40E+03	1.34E+00	7.25E+00	8.61E+01	1.96E+04	8.06E-01	1.60E-01	lb/Mgal	BAAQMD
Exempt	Portable	Portable Diesel Generator stored at N251	30.6	0.00153	0.2142	0.031	6.68E-03	2.20E-03	2.05E-03	2.47E-03	2.23E+04	8.92E-01	1.78E-01	g/HP-hr for NOx, CO, PM, SO2, TOC lb/Mgal for CO2, CH4, N2O	AP42 Volume 1 Section 3.3, table 3.3-1 for NOx, CO, PM, SO2, TOC BAAQMD for CO2, CH4, N2O

Notes:
 For the propane emergency generator, the manufacturer's emission data did not include the emission factors for PM and SO2.
 Since EPA's AP-42 emission factors don't include propane powered engines, the emission factors from EPA's AP-42 Section

Hours Used For Calculations
900 Hours for S1053
80 Hours for low-use engines (S1039, S1040, S1041 and S1054)
100 Hours for PTE Non-Emergency, PTE full (S1017, S1018, S1021, S1022, S1023, S1026 and S1042)
500 Hours for PTE Emergency N233, N254 & N258, super computers (S1029, S2540 and S2330)
2400 Permitted hours for prime UWT Generators (S2272 and S2273)
500 Hours for tub grinder (S22671)
100 Hours for PTE Emergency
100 Hours for PTE - Hydrosewer flusher (S1037)
500 Hours for PTE Emergency Water Pumps (S1032, S1033, S1046, S1047, S1048, S1051, S2210 and S2211)

Assumptions for Calculations
 For the propane emergency generator, the manufacturer's emission data did not include the emission factors for PM and SO2.
 Since EPA's AP-42 emission factors don't include propane powered engines, the emission factors from EPA's AP-42 Section 3.2 Table 3.2-2 for natural gas engines were used.
 For engines which did not have emission factors from the BAAQMD's data (most of exempt engines), emission factors from EPA's AP-42 Section 3 were used.
 If the engines were diesel powered under <600 HP the emission factors from AP-42 Section 3.3 were used.
 Assumed higher heating value of 140,000 Btu/gal for Diesel (Distillate fuel value)

APPENDIX 3:

Table B-9: Miscellaneous Sources Emission Factors

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Source #:	Bldg #:	Emissions Unit Description	NOx EF	CO EF	PM EF	SO2 EF	TOC EF	CO2 EF	CH4 EF	N2O EF	GHG EF	EF Units	EF Source
S2381	N234	2x9 Turb Flow Facility	2.98E-05	NA	NA	NA	NA	NA	NA	NA	NA	lb/Mscf	BAAQMD
S2382	N234	Aerodynamic Heating Facility	2.98E-05	NA	NA	NA	NA	NA	NA	NA	NA	lb/Mscf	BAAQMD
S2383	N238	Panel Test Facility	2.98E-05	NA	NA	NA	NA	NA	NA	NA	NA	lb/Mscf	BAAQMD
S2384	N238	Interaction Heating Facility	2.98E-05	NA	NA	NA	NA	NA	NA	NA	NA	lb/Mscf	BAAQMD
S2670	Portable	Tub Grinder	NA	NA	0.1	NA	NA	NA	NA	NA	NA	lb/tons	BAAQMD
S24332	N240	Ethylene Oxide Sterilizer	NA	NA	NA	NA	1	NA	NA	NA	NA	lb	BAAQMD