Table 3-10: Plant Site Emission Summary

Pollutant		Emission Sources					
		Pretreatment Heater Stage 2 (H2)	Coating Oven-Burner (H3)	Coating Oven (CO1)	Coating Line Baths (CL1)*	Welding (W1)	Emission Total
NOx	Tons/yr	0.386	1.72				2.10
CO	Tons/yr	0.325	1.44				1.77
VOC	Tons/yr	0.021	0.09	9.69			9.80
PM/PM10/PM2.5	Tons/yr	0.010	0.04			0.007	0.06
SO2	Tons/yr	0.010	0.04				0.05
CO2e	Tons/yr	461.60	2,051.56				2,513.16
Hazardous Air Pollutants	lb/yr	0.91	4.06	0.00	0.77	0.92	6.67
Toxic Air Contaminants	lb/yr	25.94	115.30	20,317.66	3,780.51	0.92	24,240.33

* 100% VOC in coating calculated as being emitted from Coating Oven

Table 3-11: Emission Summary for Natural Gas-Fired Categorically Insignificant Activities

Pollutant		Natural Gas-Fired Categorically Insignificant Activities (CIA)				
		Back-up Condensing Boiler (B1)	Building F Domestic Hot Water Heaters (B2)	Pretreatment Heater Stage 1 (H1)	Infrared Radiant Heating Units (H4)	CIA Emissions Total
NOx	Tons/yr	0.027	0.008	0.386	0.301	0.72
CO	Tons/yr	0.023	0.007	0.325	0.253	0.61
VOC	Tons/yr	0.002	0.0005	0.021	0.017	0.04
PM/PM10/PM2.5	Tons/yr	0.001	0.0002	0.010	0.008	0.02
SO2	Tons/yr	0.001	0.0002	0.010	0.008	0.02
CO2e	Tons/yr	32.82	9.85	461.60	360.05	864.32

Table 3-1: Emissions from Pretreatment Heater Stage 2 (H2)

Number of units	1	
Rating	0.9	MMBtu/hr
HHV Natural Gas	1,020	Btu/ft3
Max. Daily Operating Hours	24	
Max. Annual Operating Hours	8760	
Expected Max. Annual Operating Ca	100%	
Max. Annual Natural Gas Usage	7884.0	MMBtu/yr
Max. Annual Natural Gas Usage	7.7	MMCF/yr

Total Fuel Usage

Annual Natural Gas Usage	7884.0	MMBtu/yr
Annual Natural Gas Usage	7.7	MMCF/yr
Daily Natural Gas Usage	0.02	MMCF/day

Criteria Pollutants(1)		
Pollutant	Emission Factor (lb/MMCF)	Emission Rate (tpy)
NOx	100	0.386
CO	84	0.325
VOC	5.5	0.0213
PM/PM10/PM2.5	2.5	0.0097
SO2	2.6	0.0100

(1) Emission factor from ODEQ, AQ-EF05

Greenhouse Gases(2)		
Pollutant	Emission Factor (kg/MMBtu)	Emission Rate (tpy)
CO2e	53.1148	461.60

(2) Emission factor from EPA, 40 CFR Part 98, Subpart C

Toxic Air Contaminants (TACs)(3)

Toxic Air Contaminants (TACs)(3)				
Pollutant	CAS	Emission Factor (lb/MMCF)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)
Benzene	71-43-2	0.008	0.00017	0.062
Formaldehyde	50-00-0	0.017	0.00036	0.131
Polycyclic aromatic hydrocarbons (PAHs)	401	0.0001	0.00000	0.001
Benzo[a]pyrene	50-32-8	0.0000012	0.00000	0.000
Naphthalene	91-20-3	0.0003	0.00001	0.002
Acetaldehyde	75-07-0	0.0043	0.00009	0.033
Acrolein	107-02-8	0.0027	0.00006	0.021
Ammonia	7664-41-7	3.2	0.06776	24.734
Arsenic and compounds	7440-38-2	0.0002	0.00000	0.002
Barium and compounds	7440-39-3	0.0044	0.00009	0.034
Beryllium and compounds	7440-41-7	0.000012	0.00000	0.000
Cadmium and compounds	7440-43-9	0.0011	0.00002	0.009
Chromium VI, chromate and dichromate particulate	18540-29-9	0.0014	0.00003	0.011
Cobalt and compounds	7440-48-4	0.000084	0.00000	0.001
Copper and compounds	7440-50-8	0.00085	0.00002	0.007
Ethyl benzene	100-41-4	0.0095	0.00020	0.073
Hexane	110-54-3	0.0063	0.00013	0.049
Lead and compounds	7439-92-1	0.0005	0.00001	0.004
Manganese and compounds	7439-96-5	0.00038	0.00001	0.003
Mercury and compounds	7439-97-6	0.00026	0.00001	0.002
Molybdenum trioxide	1313-27-5	0.00165	0.00003	0.013
Nickel compounds, insoluble	365	0.0021	0.00004	0.016
Selenium and compounds	7782-49-2	0.000024	0.00000	0.000
Toluene	108-88-3	0.0366	0.00078	0.283
Vanadium (fume or dust)	7440-62-2	0.0023	0.00005	0.018
Xylene (mixture), including m-xylene, o-xylene, p-xylene	1330-20-7	0.0272	0.00058	0.210
Zinc and compounds	7440-66-6	0.029	0.00061	0.224
Total TACs			0.07	25.94

(3) TAC Emission Factors from ODEQ ATEI Combustion Emission Factor Tool: WebFIRE/ AP-42 Section 1.4 (metals); SCAQMD AB2588 - Default Emission Factors for Fuel Combustion, Table B-1

Table 3-2: Emissions from Coating Oven Burner (H3)

Number of units	1	
Rating	4.0	MMBtu/hr
HHV Natural Gas	1,020	Btu/ft3
Max. Daily Operating Hours	24	
Max. Annual Operating Hours	8760	
Expected Max. Annual Operating Capacity	100%	
Max. Annual Natural Gas Usage	35040.0	MMBtu/yr
Max. Annual Natural Gas Usage	34.4	MMCF/yr

Total Fuel Usage

Annual Natural Gas Usage	35040.0	MMBtu/yr
Annual Natural Gas Usage	34.4	MMCF/yr
Daily Natural Gas Usage	0.09	MMCF/day

Criteria Pollutants(1)		
Pollutant	Emission Factor (lb/MMCF)	Emission Rate (tpy)
NOx	100	1.718
CO	84	1.443
VOC	5.5	0.0945
PM/PM10/PM2.5	2.5	0.0429
SO2	2.6	0.0447

(1) Emission factor from ODEQ, AQ-EF05

Greenhouse Gases(2)		
Pollutant	Emission Factor (kg/MMBtu	Emission Rate (tpy)
CO2e	53.1148	2051.56

(2) Emission factor from EPA, 40 CFR Part 98, Subpart C

Toxic Air Contaminants (TACs)(3)				
Pollutant	CAS	Emission Factor (lb/MMCF)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)

Toxic Air Contaminants (TACs)(3)				
Pollutant	CAS	Emission Factor (lb/MMCF)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)
Benzene	71-43-2	0.008	0.00075	0.275
Formaldehyde	50-00-0	0.017	0.00160	0.584
Polycyclic aromatic hydrocarbons (PAHs)	401	0.0001	0.00001	0.003
Benzo[a]pyrene	50-32-8	0.0000012	0.00000	0.000
Naphthalene	91-20-3	0.0003	0.00003	0.010
Acetaldehyde	75-07-0	0.0043	0.00040	0.148
Acrolein	107-02-8	0.0027	0.00025	0.093
Ammonia	7664-41-7	3.2	0.30118	109.929
Arsenic and compounds	7440-38-2	0.0002	0.00002	0.007
Barium and compounds	7440-39-3	0.0044	0.00041	0.151
Beryllium and compounds	7440-41-7	0.000012	0.00000	0.000
Cadmium and compounds	7440-43-9	0.0011	0.00010	0.038
Chromium VI, chromate and dichromate particulate	18540-29-9	0.0014	0.00013	0.048
Cobalt and compounds	7440-48-4	0.000084	0.00001	0.003
Copper and compounds	7440-50-8	0.00085	0.00008	0.029
Ethyl benzene	100-41-4	0.0095	0.00089	0.326
Hexane	110-54-3	0.0063	0.00059	0.216
Lead and compounds	7439-92-1	0.0005	0.00005	0.017
Manganese and compounds	7439-96-5	0.00038	0.00004	0.013
Mercury and compounds	7439-97-6	0.00026	0.00002	0.009
Molybdenum trioxide	1313-27-5	0.00165	0.00016	0.057
Nickel compounds, insoluble	365	0.0021	0.00020	0.072
Selenium and compounds	7782-49-2	0.000024	0.00000	0.001
Toluene	108-88-3	0.0366	0.00344	1.257
Vanadium (fume or dust)	7440-62-2	0.0023	0.00022	0.079
Xylene (mixture), including m-xylene, o-xylene, p-xylene	1330-20-7	0.0272	0.00256	0.934
Zinc and compounds	7440-66-6	0.029	0.00273	0.996
Total TACs			0.32	115.30

(3) TAC Emission Factors from ODEQ ATEI Combustion Emission Factor Tool: WebFIRE/ AP-42 Section 1.4 (metals); SCAQMD AB2588 - Default Emission Factors for Fuel Combustion, Table B-1

Table 3-3: Emissions from Coating Oven (CO1)

Coating Use Information

Annual Coating* Usage	44,610	gal/yr
Resin	32,354	gal/yr
Pigment	12,256	gal/yr
Flow additive	100	gal/yr

* 2.64 gal resin to 1 gal pigment

Operating Hours	8760	hr/yr
	24	hr/day

Coating Emissions

Criteria Pollutant

		AquaEC 5100					
Pollutant	**Coating Component**	**Coating Usage gal/yr**	**Coating Density (lb/gal)**	**VOC Content by wt. (%)**	**Daily Emission lb/day**	**Annual Emission lb/yr**	**Annual Emission tpy**
VOC	Resin	32,354	8.76	2%	15.53	5,668.42	2.83
	Pigment	12,256	11.2	9%	35.50	12,958.02	6.48
	Flow Additive	100	7.47	100%	2.05	747.00	0.37
Total VOC							9.69

Toxic Air Contaminants (TACs)

Coating Component	**Chemical**	**CAS**	**Wt Percent of Component**	**Density (lb/gal)**	**Emission (lb/hr)**	**Emission (lb/day)**	**Emission (lb/yr)**
Resin	1-methoxy-2-propanol	107-98-2	3.0%	8.76	0.97	23.29	8,499.72
Pigment	butan-2-ol	78-92-2	6.4%	11.35	1.02	24.39	8,903.34
Pigment	2-butoxyethanol	111-76-2	1.8%	11.35	0.29	6.86	2,504.06
Flow Additive	2-butoxyethanol	111-76-2	55.0%	7.46	0.05	1.12	410.54
				Total TAC from Coating Oven	2.32	55.66	20,317.66

Revised 1/12/22

Electrocoating Stage (Stage 8 or Stage 9 in coating line depending on Pretreatment option used)

Operating Hours	8760 hr/yr
	24 hr/day

Using EPA emission equation from EIIP Volume II, Chapter 6- Semiconductor MFG, Equation 6.5-5, page 6.5-6 and -7:

$$Wx = (MWx * K * A * Pvapx)/(R*T)$$

where:

Wx = Evaporation rate of pollutant x (lb/sec)
MWx = molecular weight of pollutant x (lb/lb-mole)
K = gas phase mass transfer coefficient (ft/sec)= $0.00438 * U^{0.78} * (18/MWx)^{1/3}$
U = wind speed (mph)
A - surface area (square ft)
Pvapx - vapor pressure of pollutant x (psia)
R = ideal gas constant= 10.73
T = Temperature (oR)

Toxic Air Contaminants (TACs)

AquaEC 5100 Coating Component	Chemical/TAC Pollutant	CAS	Chemical Weight % in component	Chemical Molecular Weight (MW)	U Spe
Resin	1-methoxy-2-propanol	107-98-2	3.0%	90.12	
Pigment paste	2-butanol	78-92-2	6.4%	74.12	
Pigment paste	2-butoxyethanol	111-76-2	1.8%	118.17	
Flow additive	2-butoxyethanol	111-76-2	55.0%		

Table 3-5: Emissions from Welding (W1)

Operating Information

Type of Welding Process	GMAW	(Gas Metal Arc Welding)
Electrode Type	E70S	
Annual Electrode Consumption	48,000	lb/yr
Daily Electrode Consumption	288	lb/day
Overall Hood capture and Cartridge Filter efficiency	94%	(95% capture, 99% control)

Criteria Pollutants

Pollutant	Emission Factor(1) (lb/1000 lb electrode)	Controlled lb/1000 lb electrode	Emission Rate (tpy)
PM10	5.2	0.312	0.007

(1) AP-42 Table 12.19-1

Toxic Air Contaminants (TACs)

Pollutant	CAS	lb/1000 lb electrode (2)	Controlled lb/1000 lb electrode	Daily Emissions (lb/day)	Annual Emissions (lb/yr)
Chromium VI, chromate and dichromate particulate	18540-29-9	0.001	6E-05	0.00002	0.003
Cobalt and compounds	7440-48-4	0.001	6E-05	0.00002	0.003
Manganese and compounds	7439-96-5	0.318	0.01908	0.00550	0.916
Nickel and compounds, insoluble	365	0.001	6E-05	0.00002	0.003
Total TACs				0.006	0.92

(2) AP-42 Table 12.19-2 (converted from units of 0.1 lb/1000 lb electrode)

Note: Chromium compounds are HAPs but not TACs. AP-42 emission factor for Cr(VI), and ODEQ TAC is "ND"

Table 3-6: Emissions from Backup Condensing Boiler (B1)

Number of units	1	
Rating	1.6	MMBtu/hr
HHV Natural Gas	1,020	Btu/ft3
Max. Daily Operating Hours	24	
Max. Annual Operating Hours	8760	
Expected Max. Annual Operating Capacity	4%	
Max. Annual Natural Gas Usage	560.6	MMBtu/yr
Max. Annual Natural Gas Usage	0.550	MMCF/yr

Total Fuel Usage		
Annual Natural Gas Usage	560.6	MMBtu/yr
Annual Natural Gas Usage	0.5	MMCF/yr
Daily Natural Gas Usage	0.0376	MMCF/day

Criteria Pollutants(1)		
Pollutant	Emission Factor (lb/MMCF)	Emission Rate (tpy)
NOx	100	0.027
CO	84	0.023
VOC	5.5	0.0015
PM/PM10/PM2.5	2.5	0.0007
SO2	2.6	0.0007

(1) Emission factor from ODEQ, AQ-EF05

Greenhouse Gases(2)		
Pollutant	Emission Factor (kg/MMBtu)	Emission Rate (tpy)
CO2e	**53.1148**	**32.82**

(2) Emission factor from EPA, 40 CFR Part 98, Subpart C

Toxic Air Contaminants (TACs)(3)				
Pollutant	CAS	Emission Factor (lb/MMCF)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)
Benzene	71-43-2	0.008	0.00030	0.004
Formaldehyde	50-00-0	0.017	0.00064	0.009
Polycyclic aromatic hydrocarbons (PAHs)	401	0.0001	0.00000	0.000
Benzo[a]pyrene	50-32-8	0.0000012	0.00000	0.000
Naphthalene	91-20-3	0.0003	0.00001	0.000
Acetaldehyde	75-07-0	0.0043	0.00016	0.002
Acrolein	107-02-8	0.0027	0.00010	0.001
Ammonia	7664-41-7	3.2	0.12047	1.759
Arsenic and compounds	7440-38-2	0.0002	0.00001	0.000
Barium and compounds	7440-39-3	0.0044	0.00017	0.002
Beryllium and compounds	7440-41-7	0.000012	0.00000	0.000
Cadmium and compounds	7440-43-9	0.0011	0.00004	0.001
Chromium VI, chromate and dichromate par	18540-29-9	0.0014	0.00005	0.001
Cobalt and compounds	7440-48-4	0.000084	0.00000	0.000
Copper and compounds	7440-50-8	0.00085	0.00003	0.000
Ethyl benzene	100-41-4	0.0095	0.00036	0.005
Hexane	110-54-3	0.0063	0.00024	0.003
Lead and compounds	7439-92-1	0.0005	0.00002	0.000
Manganese and compounds	7439-96-5	0.00038	0.00001	0.000
Mercury and compounds	7439-97-6	0.00026	0.00001	0.000
Molybdenum trioxide	1313-27-5	0.00165	0.00006	0.001
Nickel compounds, insoluble	365	0.0021	0.00008	0.001
Selenium and compounds	7782-49-2	0.000024	0.00000	0.000
Toluene	108-88-3	0.0366	0.00138	0.020
Vanadium (fume or dust)	7440-62-2	0.0023	0.00009	0.001
Xylene (mixture), including m-xylene, o-xyle	1330-20-7	0.0272	0.00102	0.015
Zinc and compounds	7440-66-6	0.029	0.00109	0.016
Total TACs			0.13	1.84

(3) TAC Emission Factors from ODEQ ATEI Combustion Emission Factor Tool: WebFIRE/ AP-42 Section 1.4 (metals); SCAQMD AB2588 - Default Emission Factors for Fuel Combustion, Table B-1

De minimis emission levels are 1.0 tpy for each criteria pollutant and 2,756 tpy for greenhouse gases per OAR 340-200-0020(39). Aggregate expected actual annual emissions from these units are below these levels and the equipment is categorically insignificant per LRAPA 12-005.

Table 3-7: Emissions from Building F Hot Water Heaters (B2)

# of units	2	
Rating	0.16	MMBtu/hr
HHV Natural Gas	1,020	Btu/ft3
Max. Daily Operating Hours	24	
Max. Annual Operating Hours	8760	
Expected Max. Annual Operating Capacity	6%	
Max. Annual Natural Gas Usage	168.2	MMBtu/yr
Max. Annual Natural Gas Usage	0.16	MMCF/yr

Total Fuel Usage		
Annual Natural Gas Usage	168.2	MMBtu/yr
Annual Natural Gas Usage	0.2	MMCF/yr
Daily Natural Gas Usage	0.0075	MMCF/day

Criteria Pollutants(1)		
Pollutant	Emission Factor (lb/MMCF)	Emission Rate (tpy)
NOx	100	0.0082
CO	84	0.0069
VOC	5.5	0.00045
PM/PM10/PM2.5	2.5	0.00021
SO2	2.6	0.00021

(1) Emission factor from ODEQ, AQ-EF05

Greenhouse Gases(2)		
Pollutant	Emission Factor (kg/MMBtu)	Emission Rate (tpy)
CO2e	53.1148	9.85

(2) Emission factor from EPA, 40 CFR Part 98, Subpart C

Toxic Air Contaminants (TACs)(3)				
Pollutant	CAS	Emission Factor (lb/MMCF)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)
Benzene	71-43-2	0.008	0.00006	0.001
Formaldehyde	50-00-0	0.017	0.00013	0.003

Toxic Air Contaminants (TACs)(3)				
Pollutant	CAS	Emission Factor (lb/MMCF)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)
Polycyclic aromatic hydrocarbons (PAHs)	401	0.0001	0.00000	0.000
Benzo[a]pyrene	50-32-8	0.0000012	0.00000	0.000
Naphthalene	91-20-3	0.0003	0.00000	0.000
Acetaldehyde	75-07-0	0.0043	0.00003	0.001
Acrolein	107-02-8	0.0027	0.00002	0.000
Ammonia	7664-41-7	3.2	0.02409	0.528
Arsenic and compounds	7440-38-2	0.0002	0.00000	0.000
Barium and compounds	7440-39-3	0.0044	0.00003	0.001
Beryllium and compounds	7440-41-7	0.000012	0.00000	0.000
Cadmium and compounds	7440-43-9	0.0011	0.00001	0.000
Chromium VI, chromate and dichromate p	18540-29-9	0.0014	0.00001	0.000
Cobalt and compounds	7440-48-4	0.000084	0.00000	0.000
Copper and compounds	7440-50-8	0.00085	0.00001	0.000
Ethyl benzene	100-41-4	0.0095	0.00007	0.002
Hexane	110-54-3	0.0063	0.00005	0.001
Lead and compounds	7439-92-1	0.0005	0.00000	0.000
Manganese and compounds	7439-96-5	0.00038	0.00000	0.000
Mercury and compounds	7439-97-6	0.00026	0.00000	0.000
Molybdenum trioxide	1313-27-5	0.00165	0.00001	0.000
Nickel compounds, insoluble	365	0.0021	0.00002	0.000
Selenium and compounds	7782-49-2	0.000024	0.00000	0.000
Toluene	108-88-3	0.0366	0.00028	0.006
Vanadium (fume or dust)	7440-62-2	0.0023	0.00002	0.000
Xylene (mixture), including m-xylene, o-xy	1330-20-7	0.0272	0.00020	0.004
Zinc and compounds	7440-66-6	0.029	0.00022	0.005
Total TACs			0.03	0.55

(3) TAC Emission Factors from ODEQ ATEI Combustion Emission Factor Tool: WebFIRE/ AP-42 Section 1.4 (metals); SCAQMD AB2588 - Default Emission Factors for Fuel Combustion, Table B-1

De minimis emission levels are 1.0 tpy for each criteria pollutant and 2,756 tpy for greenhouse gases per OAR 340-200-0020(39). Aggregate expected actual annual emissions from these units are below these levels and the equipment is categorically insignificant per LRAPA 12-005.

Table 3-8: Emissions from Pretreatment Heater Stage 1 (H1)

Number of units	1	
Rating	0.9	MMBtu/hr
HHV Natural Gas	1,020	Btu/ft3
Max. Daily Operating Hours	24	
Max. Annual Operating Hours	8760	
Expected Max. Annual Operating Capacity	100%	
Max. Annual Natural Gas Usage	7884.0	MMBtu/yr
Max. Annual Natural Gas Usage	7.7	MMCF/yr

Total Fuel Usage

Annual Natural Gas Usage	7884.0	MMBtu/yr
Annual Natural Gas Usage	7.7	MMCF/yr
Daily Natural Gas Usage	0.0212	MMCF/day

Criteria Pollutants(1)		
Pollutant	Emission Factor (lb/MMCF)	Emission Rate (tpy)
NOx	100	0.386
CO	84	0.325
VOC	5.5	0.0213
PM/PM10/PM2.5	2.5	0.0097
SO2	2.6	0.0100

(1) Emission factor from ODEQ, AQ-EF05

Greenhouse Gases(2)		
Pollutant	Emission Factor (kg/MMBtu)	Emission Rate (tpy)
CO2e	53.1148	461.60

(2) Emission factor from EPA, 40 CFR Part 98, Subpart C

Toxic Air Contaminants (TACs)(3)				
Pollutant	CAS	Emission Factor (lb/MMCF)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)
Benzene	71-43-2	0.008	0.00017	0.062
Formaldehyde	50-00-0	0.017	0.00036	0.131
Polycyclic aromatic hydrocarbons (PAHs)	401	0.0001	0.00000	0.001
Benzo[a]pyrene	50-32-8	0.0000012	0.00000	0.000

Toxic Air Contaminants (TACs)(3)				
Pollutant	CAS	Emission Factor (lb/MMCF)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)
Naphthalene	91-20-3	0.0003	0.00001	0.002
Acetaldehyde	75-07-0	0.0043	0.00009	0.033
Acrolein	107-02-8	0.0027	0.00006	0.021
Ammonia	7664-41-7	3.2	0.06776	24.734
Arsenic and compounds	7440-38-2	0.0002	0.00000	0.002
Barium and compounds	7440-39-3	0.0044	0.00009	0.034
Beryllium and compounds	7440-41-7	0.000012	0.00000	0.000
Cadmium and compounds	7440-43-9	0.0011	0.00002	0.009
Chromium VI, chromate and dichromate par	18540-29-9	0.0014	0.00003	0.011
Cobalt and compounds	7440-48-4	0.000084	0.00000	0.001
Copper and compounds	7440-50-8	0.00085	0.00002	0.007
Ethyl benzene	100-41-4	0.0095	0.00020	0.073
Hexane	110-54-3	0.0063	0.00013	0.049
Lead and compounds	7439-92-1	0.0005	0.00001	0.004
Manganese and compounds	7439-96-5	0.00038	0.00001	0.003
Mercury and compounds	7439-97-6	0.00026	0.00001	0.002
Molybdenum trioxide	1313-27-5	0.00165	0.00003	0.013
Nickel compounds, insoluble	365	0.0021	0.00004	0.016
Selenium and compounds	7782-49-2	0.000024	0.00000	0.000
Toluene	108-88-3	0.0366	0.00078	0.283
Vanadium (fume or dust)	7440-62-2	0.0023	0.00005	0.018
Xylene (mixture), including m-xylene, o-xyle	1330-20-7	0.0272	0.00058	0.210
Zinc and compounds	7440-66-6	0.029	0.00061	0.224
Total TACs			0.07	25.94

(3) TAC Emission Factors from ODEQ ATEI Combustion Emission Factor Tool: WebFIRE/ AP-42 Section 1.4 (metals); SCAQMD AB2588 - Default Emission Factors for Fuel Combustion, Table B-1

De minimis emission levels are 1.0 tpy for each criteria pollutant and 2,756 tpy for greenhouse gases per OAR 340-200-0020(39). Aggregate expected actual annual emissions from these units are below these levels and the equipment is categorically insignificant per LRAPA 12-005.

Table 3-9: Emissions from Infrared Heaters (H4)

Number of units	27	
Rating	0.2	MMBtu/hr
HHV Natural Gas	1,020	Btu/ft3
Max. Daily Operating Hours	24	
Max. Annual Operating Hours	8760	
Expected Max. Annual Operating Capacity	13%	
Max. Annual Natural Gas Usage	6149.5	MMBtu/yr
Max. Annual Natural Gas Usage	6.0	MMCF/yr

Total Fuel Usage

Annual Natural Gas Usage	6149.5	MMBtu/yr
Annual Natural Gas Usage	6.0	MMCF/yr
Daily Natural Gas Usage	0.13	MMCF/day

Criteria Pollutants(1)		
Pollutant	Emission Factor (lb/MMCF)	Emission Rate (tpy)
NOx	100	0.3
CO	84	0.3
VOC	5.5	0.02
PM/PM10/PM2.5	2.5	0.008
SO2	2.6	0.01

(1) Emission factor from ODEQ, AQ-EF05

Greenhouse Gases(2)		
Pollutant	Emission Factor (kg/MMBtu)	Emission Rate (tpy)
CO2e	53.1148	360.05

(2) Emission factor from EPA, 40 CFR Part 98, Subpart C

Toxic Air Contaminants (TACs)(3)				
Pollutant	CAS	Emission Factor (lb/MMCF)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)
Benzene	71-43-2	0.008	0.00102	0.048
Formaldehyde	50-00-0	0.017	0.00216	0.102

Toxic Air Contaminants (TACs)(3)				
Pollutant	CAS	Emission Factor (lb/MMCF)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)
Polycyclic aromatic hydrocarbons (PAHs)	401	0.0001	0.00001	0.001
Benzo[a]pyrene	50-32-8	0.0000012	0.00000	0.000
Naphthalene	91-20-3	0.0003	0.00004	0.002
Acetaldehyde	75-07-0	0.0043	0.00055	0.026
Acrolein	107-02-8	0.0027	0.00034	0.016
Ammonia	7664-41-7	3.2	0.40659	19.293
Arsenic and compounds	7440-38-2	0.0002	0.00003	0.001
Barium and compounds	7440-39-3	0.0044	0.00056	0.027
Beryllium and compounds	7440-41-7	0.000012	0.00000	0.000
Cadmium and compounds	7440-43-9	0.0011	0.00014	0.007
Chromium VI, chromate and dichromate p	18540-29-9	0.0014	0.00018	0.008
Cobalt and compounds	7440-48-4	0.000084	0.00001	0.001
Copper and compounds	7440-50-8	0.00085	0.00011	0.005
Ethyl benzene	100-41-4	0.0095	0.00121	0.057
Hexane	110-54-3	0.0063	0.00080	0.038
Lead and compounds	7439-92-1	0.0005	0.00006	0.003
Manganese and compounds	7439-96-5	0.00038	0.00005	0.002
Mercury and compounds	7439-97-6	0.00026	0.00003	0.002
Molybdenum trioxide	1313-27-5	0.00165	0.00021	0.010
Nickel compounds, insoluble	365	0.0021	0.00027	0.013
Selenium and compounds	7782-49-2	0.000024	0.00000	0.000
Toluene	108-88-3	0.0366	0.00465	0.221
Vanadium (fume or dust)	7440-62-2	0.0023	0.00029	0.014
Xylene (mixture), including m-xylene, o-xy	1330-20-7	0.0272	0.00346	0.164
Zinc and compounds	7440-66-6	0.029	0.00368	0.175
Total TACs			0.43	20.23

(3) TAC Emission Factors from ODEQ ATEI Combustion Emission Factor Tool: WebFIRE/ AP-42 Section 1.4 (metals); SCAQMD AB2588 - Default Emission Factors for Fuel Combustion, Table B-1

De minimis emission levels are 1.0 tpy for each criteria pollutant and 2,756 tpy for greenhouse gases per OAR 340-200-0020(39). Aggregate expected actual annual emissions from these units are below these levels and the equipment is categorically insignificant per LRAPA 12-005.