Fact Sheet Attachment

Dutton-Lainson Co

Facility-wide Emission Summary

Pollutant	Potential Emissions			
	Degreaser/ Painting	Paint Burn-Off Oven	Fuel Combustion	Metal Process
	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)
Particulate Matter (PM)	0.16	0.55	0.66	0.30
PM_{10}	0.16	0.55	0.66	0.30
$PM_{2.5}$	0.16	0.55	0.66	0.30
Nitrogen Oxides (NO_x)		0.31	8.69	17.03
Sulfur Dioxide (SO_2)		0.08	0.05	
Carbon Monoxide (CO)		0.03	7.30	
Volatile Organic Compounds (VOC)	53.28		0.48	49.20
Individual Hazardous Air Pollutants (HAP)				
Benzene			1.82E-04	
Dichlorobenzene			1.04E-04	
Ethyl Benzene	1.75E-02			
Formaldehyde			6.52E-03	
Hexane			0.16	
Hydrochloric Acid		0.14		2.29
Lead Compounds			4.34E-05	
Methanol	6.57E-02			
Naphthalene			5.30E-05	
Polycyclic Organic Matter (POM)		3.29E-06	7.66E-06	
Toluene	0.58		2.95E-04	
Trichloroethylene	15.51			
Xylenes	9.11E-02			
Arsenic Compounds			1.74E-05	
Beryllium Compounds			1.04E-06	
Cadmium Compounds			9.56E-05	
Chromium Compounds			1.22E-04	2.98E-05
Cobalt Compounds			7.30E-06	2.98E-05
Manganese Compounds			3.30E-05	9.47E-03
Mercury Compounds			2.26E-05	
Nickel Compounds			1.82E-04	2.98E-05
Selenium Compounds			2.09E-06	
Total HAPs	16.26	0.14	0.16	2.30
Greenhouse Gases (GHGs) {mass basis}	**(tons/yr)**			
Carbon Dioxide (CO_2)	0	43.143	10,359.85	0
Methane (CH_4)	0	0	0.02	0
Nitrous Oxide (N_2O)	0	0	0.20	0
Total Greenhouse Gases[7]	0	43.143	10,360.07	0
Greenhouse Gases (GHGs) {CO_2 equivalents}	**(tons CO_2e/yr)**			
Carbon Dioxide (CO_2)	0	43.143	10,359.85	0
Methane (CH_4)	0	0	4.88	0
Nitrous Oxide (N_2O)	0	0	5.82	0
Total Greenhouse Gases[7]	0	43.143	10,370.56	0

Total Emissions (tons/yr)
1.67
1.67
1.67
26.03
0.13
7.33
102.95
1.82E-04
1.04E-04
1.75E-02
6.52E-03
0.16
2.43
4.34E-05
6.57E-02
5.30E-05
1.09E-05
0.58
15.51
9.11E-02
1.74E-05
1.04E-06
9.56E-05
1.51E-04
3.71E-05
9.50E-03
2.26E-05
2.12E-04
2.09E-06
18.87
10,403.00
0.02
0.20
10,403.21
10,403.00
4.88
5.82
10,413.70

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Dutton-Lainson Co
OP Conditions III.(A) and (C)
Emission Point IDs: 357-1, 358-1, 358-2, and 358-5

Operating I Maximum Operating Hours: 8,760 hrs/yr

Permit limit for degreaser:	14,100 kg/yr	15.51 tons/yr of trichloroethylene & VOC

Unit #	Unit Description	Maximum Capacity		Pollutant	Emission Factor		Control Efficiency
357-1	Batch Vapor Degreaser	12.9	lb/hr[3]	VOC	0.905	lb/lb[4]	0%
				Trichloroethylene	0.905	lb/lb[4]	0%
358-1	Powder Paint - automatic	4.6	lb/hr[3]	PM	0.35	lb/lb[5]	98%
				PM_{10}	0.35	lb/lb[5]	98%
				$PM_{2.5}$	0.35	lb/lb[5]	98%
358-2	Hand touch-up - Powder Paint	0.767	lb/hr[3]	PM	0.35	lb/lb[5]	98%
				PM_{10}	0.35	lb/lb[5]	98%
				$PM_{2.5}$	0.35	lb/lb[5]	98%
358-2	Hand touch-up - Lacquer Solvent 105068	0.056	gal/hr[3]	Solvent density	6.67	lbs/gal [7]	
				VOC	100	% of solvent [7]	0%
				Ethyl Benzene	1	% of solvent [7]	0%
				Methanol	4	% of solvent [7]	0%
				Toluene	33	% of solvent [7]	0%
				Xylene	5	% of solvent [7]	0%
358-2	Hand touch-up - Paint (Flame Retardant) - 104132	0.001	gal/hr[6]	Paint density	12.09	lbs/gal [7]	
				VOC	28	% of paint [7]	0%
				Ethyl Benzene	1	% of paint [7]	0%
				Toluene	30	% of paint [7]	0%
				Xylene	10	% of paint [7]	0%
358-2	Hand touch-up - Alumninum Color Paint -105059	0.003	gal/hr[6]	Paint density	7.42	lbs/gal [7]	
				VOC	6.19	lbs/gal [7]	0%
				Ethyl Benzene	0.3	% of paint [7]	0%
				Toluene	15	% of paint [7]	0%
				Cumene	0.3	% of paint [7]	0%
				Xylene	1.5	% of paint [7]	0%
358-5	Dip Painting - Thinner (Ethylene glycol butyl ether)	0.002	gal/hr[6]	VOC	7.5	lbs/gal [7]	0%
358-5	Dip Painting - Water based paint	0.052	gal/hr[6]	VOC	1.48	lbs/gal [7]	0%

[1] Hourly emissions (lb/hr) = (maximum capacity units/hr)*(emission factor lb/units)

[2] Annual Emissions (tons/yr) = (Hourly Emissions lb/hr)*(8,760 hrs/yr)/(2,000 lbs/ton)

[3] The maximum capacity rate, per the spreadsheet calcuations in Form 3.0 Section 301 of the 2018 permit application 18R1-030 received September 17, 2018.

[4] The emission factor for the batch vapor degreaser assumes that 90.5% of trichloroethylene is emitted and 9.5% is sent out in liquid waste, per the rate reported

[5] The Powder Paint PM_{10} emissions are calculated using South Coast Air Quality Management District Form 400-E-17A for powder coating operations as foll

[6] The maximum capacity for the liquid chemicals are based on 2018 actual throughput and actual operating hours (4160 hrs/yr).

[7] The emission factors for liquid chemicals (thinners, paints) are from Material Safety Data Sheets. Note: Ethylene glycol butyl ether (EGBE) is no longer a H

Potential Emissions	
lbs/hr[1]	tons/yr[2]
11.675	51.138
11.675	51.138
0.032	0.141
0.032	0.141
0.032	0.141
5.37E-03	0.024
5.37E-03	0.024
5.37E-03	0.024
0.375	1.643
3.75E-03	0.016
1.50E-02	0.066
0.124	0.542
1.88E-02	0.082
4.88E-03	0.021
1.74E-04	7.64E-04
5.23E-03	0.023
1.74E-03	0.008
1.64E-02	0.072
5.89E-05	2.58E-04
2.94E-03	1.29E-02
5.89E-05	2.58E-04
2.94E-04	1.29E-03
0.014	0.063
0.078	0.340

l in the 2018 emission

ɔws: PM_{10} = [max

AP per EPA in

Fact Sheet Attachment

Dutton-Lainson Co
OP Condition III.(B)
Emission Point ID: 358-4 (Paint Burn-Off Oven)

The emissions below are from the burning of the dry paint to remove it from metal parts. The emissions from fuel combustion are calculated with the fuel combustion units.

Maximum Operating Hours: 8,760 hrs/yr
Maximum Capacity: 10 lb/hr

Pollutant	Emission Factor[1]		Control Efficiency	Potential Emissions	
				(lbs/hr)[2]	(tons/yr)[3]
PM	25.1	lb/ton	0%	0.126	0.550
PM_{10}	25.1	lb/ton	0%	0.126	0.550
$PM_{2.5}$	25.1	lb/ton	0%	0.126	0.550
NO_x	14	lb/ton	0%	0.070	0.307
SO_2	3.46	lb/ton	0%	0.017	0.076
CO	1.37	lb/ton	0%	0.007	0.030
Hydrochloric Acid	6.4	lb/ton	0%	0.032	0.140
Polycyclic Organic Matter	0.00015	lb/ton	0%	7.50E-07	3.29E-06
CO2	1970	lb/ton		9.850	43.143

[1] The paint burn off oven emissions from incineration of the paint are from AP-42, Chapter 2.1
[2] Hourly emissions (lb/hr) = [(maximum capacity lb/hr)/(2,000 lbs/ton)]*(emission factor lb/ton
[3] Annual Emissions (tons/yr) = (Hourly Emissions lb/hr)*(8,760 hrs/yr)/(2,000 lbs/ton)

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Dutton-Lainson Co

OP Conditions III.(B), (D), and (E)

Emission Point ID: Fuel Combustion Sources

Unit Description	Unit ID	# of units	MMBtu/hr each	Total MMBtu/hr	Fuel type
Zinc die cast process heater	351-2	1	0.5	0.5	natural gas
Degreaser boiler	357-2	1	0.4	0.59	natural gas
Cure oven	358-3	1	0.7	0.7	natural gas
Exothermic atmosphere generators	363-1	3	0.36	1.08	natural gas
Space heaters	373-2	52	--	7.665	natural gas
Rooftop HVAC units	373-3	17	--	9.4	natural gas
Paint Burn-Off Oven burner	385-4	1	0.3	0.3	natural gas

Total MMBtu/hr	20.235	MMBtu/hr		
Heat content of natural gas	1,020	MMBtu/MMscf		
Potential Natural Gas Throughput	0.0198	MMscf/hr	173.78	MMscf/yr
Potential Operating Hours	8,760	hrs/yr		

Pollutant	(A) Emission Factor (lb/MMscf)[1]	(B) Potential Emission Rate (lb/hr)[2]	(C) Potential Emission Rate (tons/yr)[3]
Particulate Matter (PM)	7.6	0.1508	0.66
PM_{10}	7.6	0.1508	0.66
$PM_{2.5}$	7.6	0.1508	0.66
Nitrogen Oxides (NO_x)	100	1.9838	8.69
Sulfur Dioxide (SO_2)	0.60	0.0119	0.05
Carbon Monoxide (CO)	84	1.6664	7.30
Volatile Organic Compounds (VOC)	5.5	0.1091	0.48
Individual Hazardous Air Pollutants (HAP)			
Benzene	0.0021	4.17E-05	1.82E-04
Dichlorobenzene	0.0012	2.38E-05	1.04E-04
Formaldehyde	0.075	1.49E-03	6.52E-03
Hexane	1.8	3.57E-02	1.56E-01
Lead Compounds	0.0005	9.92E-06	4.34E-05
Naphthalene	0.00061	1.21E-05	5.30E-05
Polycyclic Organic Matter (POM)	0.0000882	1.75E-06	7.66E-06
Toluene	0.0034	6.75E-05	2.95E-04
Arsenic Compounds	0.0002	3.97E-06	1.74E-05
Beryllium Compounds	0.000012	2.38E-07	1.04E-06
Cadmium Compounds	0.0011	2.18E-05	9.56E-05
Chromium Compounds	0.0014	2.78E-05	1.22E-04
Cobalt Compounds	0.000084	1.67E-06	7.30E-06
Manganese Compounds	0.00038	7.54E-06	3.30E-05
Mercury Compounds	0.00026	5.16E-06	2.26E-05
Nickel Compounds	0.0021	4.17E-05	1.82E-04
Selenium Compounds	0.000024	4.76E-07	2.09E-06
Total HAPs	-	0.0375	0.1641
Greenhouse Gases (GHGs)	**(kg/MMBtu)[4]**	**(tons/yr)[5]**	**(tons CO_2e/yr)[6]**
Carbon Dioxide (CO_2)	53.0	10,359.85	10,359.85
Methane (CH_4)	1.00E-03	1.95E-01	4.88
Nitrous Oxide (N_2O)	1.00E-04	1.95E-02	5.82
Total Greenhouse Gases[7]		10,360.07	10,370.56

[1] Emission Factors for natural gas combustion from AP-42 Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4 (7/1998)

[2] For natural gas combustion: (B) = [(A) lb/MMscf] x (MMscf/hr)

[3] (C) = (B) x (8,760 hr/yr)/(2,000 lb/ton)

[4] All emission factors are default values from 40 CFR 98 Tables C-1 and C-2. This PTE summary follows the methodologies prescribed in 40 CFR

kg/tons)

[6] tons CO_2e/yr = [(tons/yr CO_2)*1]or[(tons/yr CH_4)*25] or [(tons/yr N_2O)*298]; CO_2 equivalents are found in 40 CFR Part 98 Subpart A Table A-1

[7] Total Emissions for GHGs from the combustion of propane and natural gas in insignificant combustion units.

Fact Sheet Attachment

Dutton-Lainson Co
OP Condition III.(E)
Emission Point IDs: 351-1, 355-1, 359-1, and 369-1

Maximum Operating Hours : 8,760 hrs/yr

Unit #	Unit Description	Maximum Capacity		Pollutant	Emission Factor		Control Efficiency	Potential Emissions	
								lbs/hr[1]	tons/yr[2]
351-1	Zinc die cast machine	207	lbs/hr[3]	PM	0.315	lbs/ton[4]	0%	0.0326	0.1428
				PM_{10}	0.315	lbs/ton[4]	0%	0.0326	0.1428
				$PM_{2.5}$	0.315	lbs/ton[4]	0%	0.0326	0.1428
355-1	Gas Metal Arc Welding - Welding Dept.	3.9	lb/hr	PM	5.2	lbs/1000 lb[5]	0%	0.0203	0.0888
				PM_{10}	5.2	lbs/1000 lb[5]	0%	0.0203	0.0888
				$PM_{2.5}$	5.2	lbs/1000 lb[5]	0%	0.0203	0.0888
				Chromium	0.001	lbs/1000 lb[5]	0%	3.90E-06	1.71E-05
				Cobalt	0.001	lbs/1000 lb[5]	0%	3.90E-06	1.71E-05
				Maganese	0.318	lbs/1000 lb[5]	0%	1.24E-03	5.43E-03
				Nickel	0.001	lbs/1000 lb[5]	0%	3.90E-06	1.71E-05
359-1	Zinc electroplating	432	sq ft/hr (both lines)	NOx	0.009	lb/sq ft[6]	0%	3.8880	17.0294
				VOC	0.026	lb/sq ft[6]	0%	11.2320	49.1962
		5.23	lb/hr HCl usage [8]	HCl	0.1	lb/lb HCl used[7]	0%	0.5230	2.2907
		0	gal/hr	Chromium	0.092	lb/gal	0%	0.0000	0.0000
369-1	Gas Metal Arc Welding - Jack Cell	2.9	lb/hr	PM	5.2	lbs/1000 lb[5]	0%	0.0151	0.0661
				PM_{10}	5.2	lbs/1000 lb[5]	0%	0.0151	0.0661
				$PM_{2.5}$	5.2	lbs/1000 lb[5]	0%	0.0151	0.0661
				Chromium	0.001	lbs/1000 lb[5]	0%	2.90E-06	1.27E-05
				Cobalt	0.001	lbs/1000 lb[5]	0%	2.90E-06	1.27E-05
				Maganese	0.318	lbs/1000 lb[5]	0%	9.22E-04	4.04E-03
				Nickel	0.001	lbs/1000 lb[5]	0%	2.90E-06	1.27E-05

[1] Hourly emissions (lb/hr) = (maximum capacity units/hr)*(emission factor lb/units)

[2] Annual Emissions (tons/yr) = (Hourly Emissions lb/hr)*(8,760 hrs/yr)/(2,000 lbs/ton)

[3] The maximum capacity for the zinc die cast machine is based on 4.6 lbs zinc/shot and 45 shots /hr. Usage reported in 2018 permit application 18R1-(

[4] The emission factor for PM from the zinc dies cast machine is from AP-12 Chapter 12.14 (4/81(Reformatted 1/95)), Tables 12.4-2 (stack) and

[5] The emission factor for PM_{10} from the arc welding is based on using E70S wire from AP-42 Chapter 12.19 (1/95), Table 12.19-1. PM and $PM_{2.5}$

[6] The electroplating emission factors are from EPA's Webfire (SCC 30901001). The control efficiency (99%) from the use of wet scrubbers is not

[7] Emission Factor for HCl usage in electroplating process accounts for the fact that 90% of the HCl goes to the waste water treatment plant (WWTP)

[8] Usage rates based off of 2019 Emissions Inventory