CURRENT BEST AVAILABLE CONTROL TECHNOLOGY (BACT) REQUIREMENTS

For air emissions from digester-gas-to-electricity operations (including internal combustion engines and flares) at Massachusetts farms engaged in "agriculture" or "farming" as defined in M.G.L. c. 128, section 1A, managing manure waste through anaerobic digestion or anaerobic digestion of manure with other, source-separated organic material

Source Type	Fuel	Pollutant	Emission Limitations (lb/MW-hr)
IC Engines ≤ 500 kW	Biomass Digester Gas	NOx	2
		CO	6
		PM 2.5/ PM10	0.001
		CO_2	1900 See Note 3
		VOC	3.4
		SO_2	3.4
		H_2S	See Note 4

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Source Type	Fuel	Pollutant	Emission Limitations (lb/hr)
Flares ≤ 350 scfm See Note 2	Biomass Digester Gas	NOx	0.9
		CO	4.7
		PM 10/ PM2.5	0.05
		CO_2	2450
		VOC	0.18
		SO_2	See Note 4
		H_2S	See Note 4

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Source Type	Fuel	Pollutant	Maximum Emissions (tons per 12 month rolling period)
Facility-wide See Note 5	Biomass Digester Gas	NOx	5.0
		CO	13.0
		PM10/ PM2.5	0.018
		CO_2	See Note 3
		VOC	7.3
		SO_2	1.6
		H_2S	See Note 4

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Key Abbreviations:

lbs/hr = pounds per hour
NOx = nitrogen oxides
CO = carbon monoxide
CO_2 = carbon dioxide
PM10 = particulate matter 10.0 microns or less
PM 2.5 = particulate matter 2.5 microns or less
VOC = volatile organic compounds
SO_2 = sulfur dioxide
H_2S = hydrogen sulfide
kW = kilowatt
lb/MW-hr = pounds per megawatt hour output
scfm = standard cubic feet per minute
ppm = parts per million
$\leq$ = less than or equal to

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Notes

1. All digester gas generating sources shall be totally enclosed and vented to either the IC engine or "back-up" flare. All sources with odor potential shall be controlled to prevent nuisance odor conditions.

2. Back-up flares must be utility flare design with the flame shielded such that there is no exposed flame. Emission limits in Table are "not to be exceeded" values. MassDEP will set individual flare limits on a case-by-case basis, depending upon actual flare rating and inlet gas flow rate.

3. Facility-wide CO_2 caps are undefined for this source category. The CO_2 emission limit for the engine is based upon CO2 emissions resulting from combustion of methane only.

4. H_2S emissions are regulated by restricting the inlet H_2S emissions to the IC engine and flare to less than or equal to 200 ppm. SO_2 emissions are based upon 99.5 percent oxidation of 200 ppm H_2S inlet emissions to the IC engine and flare.

5. Facility-wide limits include engine and flare only and are "not to be exceeded" values. MassDEP will set individual facility-wide limits on a case-by-case basis depending upon actual engine and flare ratings.