

**SBCAPCD Default Boiler/Process Heater/Large Water Heater/
Steam Generator Emission Factors (Rev. 2.0, 8/28/2018)**

Rated Heat Input (Btu/hr)	Emission Factor (lb/MMBtu)						
	NO _x	ROC	CO	SO _x	PM	PM ₁₀	PM _{2.5}
75,000 – 400,000							
<i>Uncontrolled^a</i>	0.0920	0.0054	0.0393	0.169 * S / HHV ^b	0.0075	0.0075	0.0075
<i>Rule 360</i>	0.0670	0.0054	0.0393	0.169 * S / HHV ^b	0.0075	0.0075	0.0075
<i>BACT</i>	0.0244	0.0054	0.0371	0.0137	0.0075	0.0075	0.0075
400,001 – 2,000,000							
<i>Uncontrolled^a</i>	0.0980	0.0054	0.0820	0.169 * S / HHV ^b	0.0075	0.0075	0.0075
<i>Rule 360</i>	0.0365	0.0054	0.2965	0.169 * S / HHV ^b	0.0075	0.0075	0.0075
<i>BACT</i>	0.0146	0.0054	0.0741	0.0137	0.0075	0.0075	0.0075

2,000,001 – 4,999,999							
<i>Uncontrolled^a</i>	0.0980	0.0054	0.0820	0.169 * S / HHV ^b	0.0075	0.0075	0.0075
<i>Rule 361</i>	0.0365	0.0054	0.2965	0.169 * S / HHV ^b	0.0075	0.0075	0.0075
<i>BACT</i>	0.0110	0.0054	0.0741	0.0137	0.0075	0.0075	0.0075

5,000,000 – 19,999,999							
<i>Uncontrolled^a</i>	0.0980	0.0054	0.0820	0.169 * S / HHV ^b	0.0075	0.0075	0.0075
<i>Rule 342</i>	0.0365	0.0054	0.2965	0.169 * S / HHV ^b	0.0075	0.0075	0.0075
<i>BACT</i>	0.0110	0.0054	0.0741	0.0137	0.0075	0.0075	0.0075
20,000,000 – 25,999,999							
<i>Uncontrolled^a</i>	0.0980	0.0054	0.0820	0.169 * S / HHV ^b	0.0075	0.0075	0.0075
<i>Rule 342</i>	0.0365	0.0054	0.2965	0.169 * S / HHV ^b	0.0075	0.0075	0.0075
<i>BACT</i>	0.0085	0.0054	0.0741	0.0137	0.0075	0.0075	0.0075
26,000,000 and Greater							
<i>Uncontrolled^a</i>	0.0980	0.0054	0.0820	0.169 * S / HHV ^b	0.0075	0.0075	0.0075
<i>Rule 342</i>	0.0365	0.0054	0.2965	0.169 * S / HHV ^b	0.0075	0.0075	0.0075
<i>BACT</i>	0.0061	0.0054	0.0741	0.0137	0.0075	0.0075	0.0075

BACT Oilfield Steam Generators

	NO _x	ROC	CO	SO _x	PM	PM ₁₀	PM _{2.5}
<i>5,000,000 – 19,999,999</i>	0.0110	0.0054	0.0371	0.0137	0.0075	0.0075	0.0075
<i>20,000,000 - 49,999,999</i>	0.0085	0.0030	0.0185	0.0137	0.0075	0.0075	0.0075
<i>50,000,000 – 84,999,999</i>	0.0085	0.0036	0.0185	0.0137	0.0075	0.0075	0.0075
<i>85,000,000 and Greater</i>	0.0085	0.0017	0.0185	0.0137	0.0075	0.0075	0.0075

Notes:

- To determine the uncontrolled NO_x emission factor for a unit fired on propane fuel, multiply the uncontrolled NO_x emission factor by 1.5. This is the approximate ratio of propane NO_x emissions to natural gas NO_x emissions per AP-42, Table 1.5-1, Emission Factors for LPG Combustion (10/96).
- S means the sulfur content of the fuel (ppmv) and HHV means the higher heating value of the fuel (Btu/scf).
- All the emission factors are based the combustion of PUC quality natural gas. The PUC quality natural gas is assumed to have a molar volume of 379.7 dscf/lb-mol at standard temperature and pressure (1 atm and 60° F) and F_d factor of 8,608 dscf/MMBtu.