

T03 - TURBINE, DISTILLATE FIRED, ALL SIZES, UNCONTROLLED

CALCULATION METHODS

Ea = Ua x EF (lbs/1000 gallons)

Eh = Uh (gal/hr) x (1/1000) x EF (lbs/1000 gallons)

NOTES:

- Emission factors are based on a diesel BTU content of 139,000 BTU/gallon and density of 7.1 lbs/gal per AP-42.

- Control efficiencies must be included in emission factors since the calculation procedures will not refer to this data.

- Trace metal emission factors are based on mass balance procedures instead of AP-42, Table 3.1-5.

- A USEPA memo (8/21/01) titled "Hazardous Air Pollutant (HAP) Emission Control Technology for New Stationary Combustion Turbines" lists emission factors for Acetaldehyde, Benzene, Cadmium, Chromium, Formaldehyde, Lead, Manganese, Mercury, and Lead that are not significantly different from AP-42.

| Pollutant | District Emission Factor (lbs/1000 gal fuel input) | EPA Reference Document | EPA Factor | Units | Comments |
|-------------------------|--|-------------------------------------|------------|-----------|---|
| NOx | 122.32 | AP-42, Sect 3.1, 4/00, Table 3.1-1 | 8.80E-01 | lbs/MMBTU | |
| CO | 0.46 | AP-42, Sect 3.1, 4/00, Table 3.1-1 | 3.30E-03 | lbs/MMBTU | |
| SOx | 7.10 | AP-42, Sect 3.1, 4/00, Table 3.1-2a | 0.000505 | lbs/MMBTU | Assume a sulfur content of 0.05% and a fuel density of 7.1 lbs/gal |
| TOG | 0.56 | AP-42, Sect 3.1, 4/00, Table 3.1-2a | 4.00E-03 | lbs/MMBTU | |
| ROG | 0.06 | AP-42, Sect 3.1, 4/00, Table 3.1-2a | 4.10E-04 | lbs/MMBTU | |
| TSP | 1.67 | AP-42, Sect 3.1, 4/00, Table 3.1-2a | 1.20E-02 | lbs/MMBTU | |
| PM10 | 1.60 | AP-42, Sect 3.1, 4/00, Table 3.1-2a | 0.0115 | lbs/MMBTU | |
| Arsenic | 0.0078 | | | lbs/MMBTU | Based on average of fuel analyses submitted to SD County (AB2588 90-91) |
| Benzene | 0.0076 | AP-42, Sect 3.1, 4/00, Table 3.1-4 | 5.50E-05 | lbs/MMBTU | |
| 1,3-Butadiene | 0.0022 | AP-42, Sect 3.1, 4/00, Table 3.1-4 | 1.60E-05 | lbs/MMBTU | |
| Cadmium | 0.0012 | | | lbs/MMBTU | Based on average of fuel analyses submitted to SD County (AB2588 90-91) |
| Chromium Hexavalent | 0.0002 | | | lbs/MMBTU | Based on average of fuel analyses submitted to SD County (AB2588 90-91) |
| Chromium Non-Hexavalent | 0.0032 | | | lbs/MMBTU | Based on average of fuel analyses submitted to SD County (AB2588 90-91) |
| Copper | 0.0036 | | | lbs/MMBTU | Based on average of fuel analyses submitted to SD County (AB2588 90-91) |
| Diesel Particulate | | | | | |
| Formaldehyde | 0.0389 | AP-42, Sect 3.1, 4/00, Table 3.1-4 | 2.80E-04 | lbs/MMBTU | |
| Lead | 0.0048 | | | lbs/MMBTU | Based on average of fuel analyses submitted to SD County (AB2588 90-91) |
| Manganese | 0.0014 | | | lbs/MMBTU | Based on average of fuel analyses submitted to SD County (AB2588 90-91) |
| Mercury | 0.0023 | | | lbs/MMBTU | Based on average of fuel analyses submitted to SD County (AB2588 90-91) |
| Naphthalene | 0.0049 | AP-42, Sect 3.1, 4/00, Table 3.1-4 | 3.50E-05 | lbs/MMBTU | |
| Nickel | 0.0023 | | | lbs/MMBTU | Based on average of fuel analyses submitted to SD County (AB2588 90-91) |
| PAH's Unspecified | 0.0056 | AP-42, Sect 3.1, 4/00, Table 3.1-4 | 4.00E-05 | lbs/MMBTU | |
| Selenium | 0.0098 | | | lbs/MMBTU | Based on average of fuel analyses submitted to SD County (AB2588 90-91) |
| Zinc | 0.0143 | | | lbs/MMBTU | Based on average of fuel analyses submitted to SD County (AB2588 90-91) |