CALCULATION METHODS

\[ E_a = U_a \times EF \text{ (lbs/mmft}^3\text{)} \]
\[ E_h = U_h \text{ (scfm)} \times \left(\frac{60}{1000000}\right) \times EF \text{ (lbs/mmft}^3\text{)} \]

NOTES:

- Catalytic oxidation can achieve efficiencies of approximately 90% in reducing of CO, ROG, TOG, and AB2588 toxic organic compounds.

- The trace organic factors listed below are based on detected AB 2588 compounds listed in AP-42 Table 3.2-2 (7/00).

- The AP-42 (7/00) emission factors have been converted into lbs/mm scf by assuming a natural gas BTU content of 1020 BTU/scf.

- PM10 and TSP emission factors include filterable and condensable PM in accordance with the District's definition of particulate matter.

- The listed AP-42 emission factors for 1,1,2-trichloroethane, 1,1-dichloroethane, 1,2-dichloroethane, 1,2-dichloropropane, 1,3-dichloropropene, carbon tetrachloride, chloroform, ethylene dibromide, styrene, and vinyl chloride are NOT included since these values are based on nondetectable test results.

- The listed AP-42 emission factors for 1,1,2,2-tetrachloroethane, 1,2,4-trimethylbenzene, 2,2,4-trimethylpentane, 2-methylnapthalene, acenaphthalene, acenaphthylene, anthracene, benz(a)anthracene, benz(a)pyrene, benz(b)fluoranthene, benz(g,h,i)perylene, benzo(k)fluoranthene, biphenyl, chlorobenzene, chrysene, cyclonexane, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, perylene, phenanthrene, and pyrene are NOT included since these values were based on insignificant and/or nondetectable test results.

- Trace metal emission factors were not reported in AP-42 and are NOT included since natural gas fired engines are not expected to emit metals.

- The AP-42 emission factors for 1,2,3-trimethylbenzene, 1,3,5-trimethylpentane, butane, buty/iso butyraldehyde, cyclopentane, ethane, isobutane, methylcyclohexane, n-nonane, n-octane, n-pentane, and propane are not included since these are not listed toxic air contaminants.

- The AP-42 acrolein emission factor is NOT included since this value is based on test data and detection limits from incorrect sampling methods. A District factor based on local test results and adjusted for equipment VOC controls is considered more accurate than the AP-42 value.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>District Emission Factor (lbs/million ft3 fuel burned)</th>
<th>EPA Reference Document</th>
<th>EPA Factor</th>
<th>Units</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>4161.60</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>4.08E+00</td>
<td>lbs/MBTU</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
</tr>
<tr>
<td>CO</td>
<td>32.33</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>3.17E-01</td>
<td>lbs/MBTU</td>
<td>Assume a sulfur content of 0.05% and a fuel density of 7 lbs/gal</td>
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<tr>
<td>SOx</td>
<td>0.60</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>5.88E-04</td>
<td>lbs/MBTU</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
</tr>
<tr>
<td>TOG</td>
<td>149.94</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>1.47E+00</td>
<td>lbs/MBTU</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
</tr>
<tr>
<td>ROG</td>
<td>12.04</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>1.18E-01</td>
<td>lbs/MBTU</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
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<tr>
<td>TSP</td>
<td>10.19</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>9.99E-03</td>
<td>lbs/MBTU</td>
<td>TSP includes filterable (7.71 E-05) and condensable (9.91 E-03) PM.</td>
</tr>
<tr>
<td>PM10</td>
<td>10.19</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>9.99E-03</td>
<td>lbs/MBTU</td>
<td>PM10 includes filterable (7.71 E-05) and condensable (9.91 E-03) PM.</td>
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<tr>
<td>1,3-Butadiene</td>
<td>0.03</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>2.67E-04</td>
<td>lbs/MBTU</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
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<tr>
<td>Acetaldehyde</td>
<td>0.85</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>8.36E-03</td>
<td>lbs/MBTU</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
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<tr>
<td>Acrolein</td>
<td>0.01</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>5.14E-03</td>
<td>lbs/MBTU</td>
<td>District emission factor based on SDAPCD source test results.</td>
</tr>
<tr>
<td>Compound</td>
<td>Value</td>
<td>Source</td>
<td>lbs/MMBTU</td>
<td>Control Method</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>-------</td>
<td>--------------------</td>
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<td>---------------------------------</td>
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<tr>
<td>Benzene</td>
<td>0.04</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>4.40E-04</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
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<tr>
<td>Ethylbenzene</td>
<td>0.004</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>3.97E-05</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
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<td>Formaldehyde</td>
<td>5.39</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>5.28E-02</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
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<tr>
<td>Hexane</td>
<td>0.11</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>1.11E-03</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
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<td>Methanol</td>
<td>0.26</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>2.50E-03</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
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<tr>
<td>Methylene Chloride</td>
<td>0.002</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>2.00E-05</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
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<tr>
<td>Naphthalene</td>
<td>0.01</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>7.44E-05</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
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<td>PAH</td>
<td>0.003</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>2.69E-05</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
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<tr>
<td>Phenol</td>
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<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>2.40E-05</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
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<tr>
<td>Toluene</td>
<td>0.04</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>4.08E-04</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
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<tr>
<td>Xylenes</td>
<td>0.02</td>
<td>AP-42, Sect 3.2, 7/00, Table 3.2-2</td>
<td>1.84E-04</td>
<td>Catalytic oxidation 90% control of value shown in Table 3.2-2</td>
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