

**INSTRUCTIONS**  
**FORM F20a**  
**REFINERY FUGITIVE VOC EMISSIONS**  
(Sources include: valves, flanges, seals, and drains)

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Division of Air Quality  
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|---------------------------|--|
| DAQ ID                    | For Office use only.   |
| Pt. Source ID             | Provide the identification number the company associates with the process.   |
| SCC                       | Enter the appropriate Source Classification Code (SCC). See <i>page 18 of the General Instructions for explanation.</i>  |
| Source Description        | Choose from the following: <ol style="list-style-type: none"><li>1. Process drains - Wastewater separators w/o recovery systems and/or separator covers.</li><li>2. Process drains - Wastewater separator w/ recovery systems and separator covers.</li><li>3. Asphalt blowing.</li><li>4. Blind charging.</li><li>5. Vacuum jets.</li><li>6. Cooling towers.</li><li>7. Misc. sampling, sweetening, purging.</li><li>8. Pipeline valves.</li><li>9. Pipeline flanges.</li><li>10. Pump seals.</li><li>11. Mechanical pump seals.</li><li>12. Dual pump seals.</li><li>13. Purged seals.</li><li>14. Compressor seals.</li><li>15. Vessel relief valves.</li><li>16. Open ended lines and sampling valves.</li></ol> |
| Process Stream Type       | Select the following type of streams: <ol style="list-style-type: none"><li>I. All streams.</li><li>II. Gas streams.</li><li>III. Light liquid and gas/liquid streams.</li><li>IV. Heavy liquid streams.</li><li>V. Hydrogen streams.</li></ol>  |
| Number of Units           | List the total number of units in operation emitting fugitive hydrocarbons (note: this is not the total checked for the year, it is the actual number of units).   |
| Refinery Feed or Water    | Specify feedstocks, products, or water.  |
| Amount                    | State the thru-put of feedstocks, products, or water.  |
| Units                     | Specify the thru-put units in 10 <sup>3</sup> bbl per year or 10 <sup>3</sup> gals per year.   |
| Emission Control Code     | Describe the control technology used such as traps, covers, vapor recovery, etc. (Note: this field should be left blank if leak/no leak emission factors were used).   |
| % Control Efficiency      | Give the efficiency of the control method used.  |
| If Control Is Other, List | Describe the control equipment if other method was used.   |

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| VOC Emissions                  | Calculate the amount of VOC in tons per year. <b>Provide complete calculations on a separate sheet.</b>  |
| Estimate Code                  | Provide the method code for quantifying actual emissions of each pollutant. The valid method codes are listed in Table 6, page 26 of the General Instructions. If estimate code <b>8</b> (EPA Emission Factor) is used, also include the specific AP-42 section used in the Comments field; see page 15 for a link to AP-42. |
| Emission Factor                | Provide the emission factor used to calculate the estimated VOC emissions. This emission factor is the weighted average of the emission factor for leakers and the emission factor for nonleakers.   |
| Units                          | Please provide the units of emission factor for the purpose of review, such as lb/10 <sup>3</sup> gal, lb/10 <sup>3</sup> bbl, or kg/hr/source.  |
| Percent Leakers                | Provide the percentage of leakers of those checked for the entire year.  |
| Emission Factor for Leakers    | Give the emission factor for leakers.  |
| Units                          | Provide the associated emission factor unit such as lb/hr/source or kg/hr/source; the latter is preferred.   |
| Emission factor for Nonleakers | Give the emission factor for nonleakers.   |
| Units                          | Provide the associated emission factor unit.   |
| Comment                        | Provide any additional information necessary for calculation of emissions.   |