

**A04 - ASPHALT PLANT, DRUM MIX, DISTILLATE FIRED, BAGHOUSE**

**CALCULATION METHODS**

$E_a = U_a \times EF$

$E_h = U_h \times EF$

**NOTES:**

- NOx and CO emissions are based on fuel usage (1000 gal/hr or yr). Emission factors are lbs/1000 gallons fuel burned.
- NOx and CO factors are from the D. Smith memo (6/26/97) or site specific source test results, or AP-42 Section 11.1 (3/04).
- TOG, VOC, SOx, TSP, PM10, and trace toxic emissions are based on production (tons asphalt/hr or yr). Emission factors are lbs/ton asphalt.
- TOG, VOC, SOx, TSP, PM10, and trace toxic emissions factors are from site specific source test results or AP-42 Section 11.1 (3/04).
- TSP and PM10 uncontrolled drop zone emissions are assumed to be 0.018 lbs/ton of production as specified in the M. Lake memo (3/20/96).
- Drop zone emissions are unspeciated at this time. The factors listed below are for the control system exhaust only and do not include fugitive drop zone emissions.

<b>POLLUTANT</b>	<b>District Emission Factor</b>	<b>EPA REFERENCE</b>	<b>EPA</b>	<b>(UNITS)</b>	<b>COMMENTS</b>
	<b>(lbs/1000 gal or lbs/ton production)</b>	<b>DOCUMENT</b>	<b>FACTOR</b>		
NOX	41.670	AP-42 factor in lbs/ton not used as default.	0.0550	lbs/ton	Assume 1.8 gallons distillate burned per ton of asphalt production.
CO	20.000	AP-42 factor in lbs/ton not used as default.	0.1300	lbs/ton	Assume 1.8 gallons distillate burned per ton of asphalt production.
SOX	0.0580	AP-42, Sect. 11.1 (3/04), Table 11.1-7	0.0580	lbs/ton	Sulfur sources may include the fuel, aggregate, and asphalt oil/slurry.
TOG	0.0440	AP-42, Sect. 11.1, (3/04) Tables 11.1-8	0.0440	lbs/ton	TOG value = VOC value + methane in Table 11.1-8.
VOC	0.0320	AP-42, Sect. 11.1 (3/04), Table 11.1-8	0.0320	lbs/ton	Use site specific NMHC test data if available. TOG should be more than VOC.
TSP	0.0330	AP-42, Sect. 11.1 (3/04), Table 11.1-3	0.0330	lbs/ton	Use site specific TSP test information if available.
PM10	0.0230	AP-42, Sect. 11.1 (3/04), Table 11.1-3	0.0230	lbs/ton	Use site specific PM10 test data if available. PM10 should not exceed TSP.
1,1,1-TRICHLOROETHANE	4.80E-05	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	4.80E-05	lbs/ton	
2,2,4-TRIMETHYLPENTANE	4.00E-05	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	4.00E-05	lbs/ton	
ACETALDEHYDE	1.30E-03	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	1.30E-03	lbs/ton	
ACETONE	8.30E-04	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	8.30E-04	lbs/ton	
ACROLEIN	2.60E-05	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	2.60E-05	lbs/ton	
ANTIMONY	1.80E-07	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	1.80E-07	lbs/ton	
ARSENIC	5.60E-07	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	5.60E-07	lbs/ton	
BARIUM	5.80E-06	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	5.80E-06	lbs/ton	
BENZENE	3.90E-04	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	3.90E-04	lbs/ton	
CADMIUM	4.10E-07	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	4.10E-07	lbs/ton	
CHROMIUM HEXAVALENT	4.50E-07	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	4.50E-07	lbs/ton	
TOTAL CHROMIUM	5.50E-06	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	5.50E-06	lbs/ton	
COBALT	2.60E-08	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	2.60E-08	lbs/ton	
COPPER	3.10E-06	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	3.10E-06	lbs/ton	

CROTONALDEHYDE	8.60E-05	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	8.60E-05	lbs/ton	
ETHYL BENZENE	2.40E-04	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	2.40E-04	lbs/ton	
ETHYLENE	7.00E-03	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	7.00E-03	lbs/ton	
FORMALDEHYDE	3.10E-03	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	3.10E-03	lbs/ton	
HEXANE	9.20E-04	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	9.20E-04	lbs/ton	
HYDROGEN CHLORIDE	2.10E-04	AP-42, Sect. 11.1, (3/04) Tables 11.1-8	2.10E-04	lbs/ton	
ISOBUTYALDEHYDE	1.60E-04	AP-42, Sect. 11.1, (3/04) Tables 11.1-9 & 11	1.60E-04	lbs/ton	
LEAD	1.50E-05	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	1.50E-05	lbs/ton	
MANGANESE	7.70E-06	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	7.70E-06	lbs/ton	
MERCURY	2.60E-06	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	2.60E-06	lbs/ton	
METHANE	3.20E-02	AP-42, Sect. 11.1 (3/04), Table 11.1-8	3.20E-02	lbs/ton	
METHYL ETHYL KETONE	2.00E-05	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	2.00E-05	lbs/ton	
NICKEL	6.30E-05	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	6.30E-05	lbs/ton	
2-METHYLNAPHTHALENE	1.70E-04	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	1.70E-04	lbs/ton	
ACENAPHTHENE	1.40E-06	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	1.40E-06	lbs/ton	
ACENAPHTHYLENE	2.20E-05	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	2.20E-05	lbs/ton	
ANTHRACENE	3.10E-06	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	3.10E-06	lbs/ton	
BENZO(A)ANTHRACENE	2.10E-07	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	2.10E-07	lbs/ton	
BENZO(A)PYRENE	9.80E-09	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	9.80E-09	lbs/ton	
BENZO(B)FLUORANTHENE	1.00E-07	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	1.00E-07	lbs/ton	
BENZO(E)PYRENE	1.10E-07	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	1.10E-07	lbs/ton	
BENZO(G,H,I)PERYLENE	4.00E-08	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	4.00E-08	lbs/ton	
BENZO(K)FLUORANTHENE	4.10E-08	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	4.10E-08	lbs/ton	
CHRYSENE	1.80E-07	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	1.80E-07	lbs/ton	
FLUORANTHENE	6.10E-07	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	6.10E-07	lbs/ton	
FLUORENE	1.10E-05	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	1.10E-05	lbs/ton	
INDENO(1,2,3-CD)PYRENE	7.00E-09	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	7.00E-09	lbs/ton	
NAPHTHALENE	6.50E-04	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	6.50E-04	lbs/ton	
PERYLENE	8.80E-09	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	8.80E-09	lbs/ton	
PHENANTHRENE	2.30E-05	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	2.30E-05	lbs/ton	
PYRENE	3.00E-06	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	3.00E-06	lbs/ton	
PHOSPHORUS	2.80E-05	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	2.80E-05	lbs/ton	
PROPIONALDEHYDE	1.30E-04	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	1.30E-04	lbs/ton	

QUINONE	1.60E-04	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	1.60E-04	lbs/ton	
SELENIUM	3.50E-07	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	3.50E-07	lbs/ton	
SILVER	4.80E-07	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	4.80E-07	lbs/ton	
THALLIUM	4.10E-09	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	4.10E-09	lbs/ton	
TOLUENE	2.90E-03	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	2.90E-03	lbs/ton	
XYLENE	2.00E-04	AP-42, Sect. 11.1, (3/04) Tables 11.1-10	2.00E-04	lbs/ton	
ZINC	6.10E-05	AP-42, Sect. 11.1, (3/04) Tables 11.1-12	6.10E-05	lbs/ton	

*Last Updated on 5/21/2019*

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