

5.22 v3/External

[If adopted, this would amend the January 17, 2007 version of Regulation 5.22]

**REGULATION 5.22 Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant**

**Louisville Metro Air Pollution Control District of Jefferson County  
Jefferson County, Kentucky**

**Pursuant To:** KRS Chapter 77 Air Pollution Control

**Relates To:** Chapter 5 of the District's regulations.

**Necessity and Function:** KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes the procedures for determining the maximum concentration of a toxic air contaminant in the ambient air.

**SECTION 1 Determining the Maximum Ambient Concentration of a Toxic Air Contaminant**

1.1 The maximum ambient concentration of a ~~toxic air contaminant~~ TAC determined by one of the procedures in Sections 2 to 5 shall be used to determine compliance with the ambient goals for environmental acceptability (EA goals) established in ~~Regulation~~ Regulation 5.21, 5.24

~~Environmental Acceptability for Toxic Air Contaminants.~~

1.2 For intermittent emissions, the average emission rate may be used to determine the maximum ambient concentration. ~~if the average rate is not less than 10% of the maximum hourly rate. If the average rate for an intermittent emission is less than 10% of the maximum hourly rate, then a rate of 10% of the maximum hourly rate may be used.~~ Intermittent emissions are emissions that are not allowed to be emitted continuously for the entire length of the time specified in Regulation 5.20 ~~Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant~~ as the applicable averaging time for a benchmark ambient concentration.

1.3 Each procedure in Sections 2 to 5 represents an acceptable method for determining the maximum ambient concentration of a TAC ~~toxic air contaminant~~, although there are stated limitations for the use of the Tier 2 procedure. In general, the intent is that the Tier 1 procedure is the most simple to use, requires the least amount of process- and process equipment-specific information, and provides the most conservative maximum ambient concentration; proceeding on a continuum, the Tier 4 procedure is the most complex to use, requires the greatest amount of process- and process equipment-specific information, and provides the least conservative maximum ambient concentration. The following is a brief description of the four procedures:

1.3.1 Tier 1 - Table 1: Simple Factor for Determining Maximum Ambient Concentration: The allowed emission rate for the appropriate averaging time for the specific ~~toxic air contaminant~~ TAC is divided by a factor from the table to give the maximum ambient concentration.

1.3.2 Tier 2 - Table 2: Annual Factor: The allowed hourly emission rate is divided by the appropriate annual factor from the table to give the maximum ambient concentration. The annual factor from the table depends on the building height, stack height-to-building height ratio, and the distance to the closest property line, and the annual

## 5.22 v3/External

[If adopted, this would amend the January 17, 2007 version of Regulation 5.22]

- 46 factor from the table may be adjusted depending on the averaging time of the  
 47 ~~benchmark ambient concentration~~ BAC for the specific ~~toxic air contaminant~~ TAC.
- 48 1.3.3 Tier 3 - SCREEN3 and TSCREEN Models: The output of these screening models is  
 49 the maximum hourly ambient concentration. The maximum hourly ambient  
 50 concentration may be multiplied by an adjustment factor depending on the averaging  
 51 time of the ~~benchmark ambient concentration~~ BAC for the specific ~~toxic air~~  
 52 ~~contaminant~~ TAC. The models contain different algorithms based upon the type of  
 53 release, for example, stack or fugitive. Basic dispersion modeling parameters are  
 54 required, such as building height and dimensions, stack height, stack diameter,  
 55 exhaust gas flow rate, exhaust gas temperature, and emission rate for a stack  
 56 emission.
- 57 1.3.4 Tier 4 - EPA-Approved Dispersion Model: The output of these highly complex  
 58 models is the maximum ambient concentration for the identified averaging time,  
 59 which is set within the model depending on the averaging time of the ~~benchmark~~  
 60 ~~ambient concentration~~ BAC for the specific ~~toxic air contaminant~~ TAC. The models  
 61 contain different algorithms based upon the type of release, for example, stack or  
 62 fugitive. Detailed dispersion modeling parameters are required.
- 63 1.4 If there is not an established applicable emission limit for a ~~toxic air contaminant~~ TAC  
 64 ~~(TAC)~~, then the potential to emit for that TAC shall be used. However, pursuant to  
 65 ~~Regulation~~ Regulation 5.21-5.21-Section 4.3, the owner or operator of the stationary  
 66 source may request a new emission limit for that TAC that, upon receipt by the District,  
 67 may be used to determine the maximum ambient concentration pursuant to Regulation  
 68 5.22.
- 69 1.5 If the District determines that the model chosen, model options, or model inputs are not  
 70 appropriate to model the emissions from a process or process equipment, then the District  
 71 may disapprove the results of the modeling demonstration.

## 72 SECTION 2 Tier 1 - Table 1: Simple Factor for Determining Maximum Ambient 73 Concentration

- 74 2.1 The maximum concentration of a ~~toxic air contaminant~~ TAC from a process or process  
 75 equipment in the ambient air may be determined by using the appropriate factor from  
 76 Table 1 and the applicable Equation 1 to 4. The appropriate factor is determined by the  
 77 averaging time for a specific ~~toxic air contaminant~~ TAC, which is established in  
 78 Regulation 5.20. The calculated maximum concentration is then used in determining  
 79 compliance with the EA goals in ~~Regulation~~ Regulation 5.21 5.21 by using the applicable  
 80 equation in ~~Regulation~~ Regulation 5.21-5.21-section 2.2, 2.5, or 2.8. If Table 1 contains  
 81 two factors for a benchmark ambient concentration (BAC) averaging time, then the factor  
 82 that results in the greater maximum concentration shall be used.
- 83 2.2 Table 1 *Simple Factor for Determining Maximum Concentration* reads as follows:  
 84

5.22 v3/External

[If adopted, this would amend the January 17, 2007 version of Regulation 5.22]

85  
86  
87

**Table 1**  
**Simple Factor for Determining Maximum Ambient Concentration**

<b>BAC<sup>1</sup> Averaging Time</b>	<b>Annual Factor (F<sub>A</sub>)<sup>2</sup></b>	<b>24-Hour Factor (F<sub>24</sub>)<sup>3</sup></b>	<b>8-Hour Factor (F<sub>8</sub>)<sup>4</sup></b>	<b>1-Hour Factor (F<sub>1</sub>)<sup>5</sup></b>
<b>Annual</b>	480			0.54
<b>24 hours</b>		0.12		0.05
<b>8 hours</b>			0.02	0.02
<b>1 hour</b>				0.001

88  
89  
90  
91  
92  
93  
94  
95  
96  
97

Notes for Table 1:

- <sup>1</sup> BAC is the benchmark ambient concentration of a ~~toxic air contaminant~~TAC as determined pursuant to Regulation 5.20.
- <sup>2</sup> The Annual Factor F<sub>A</sub> is in units of (lb/year)/(μg/m<sup>3</sup>). Use Equation 1.
- <sup>3</sup> The 24-Hour Factor F<sub>24</sub> is in units of (lb/24 hours)/(μg/m<sup>3</sup>). Use Equation 2.
- <sup>4</sup> The 8-Hour Factor F<sub>8</sub> is in units of (lb/8 hours)/(μg/m<sup>3</sup>). Use Equation 3.
- <sup>5</sup> The 1-Hour Factor F<sub>1</sub> is in units of (lb/1 hour)/(μg/m<sup>3</sup>). Use Equation 4.

98  
99

$$\text{Maximum Concentration}_{i j} = \frac{\text{Allowed annual emission}_{i j}}{F_A} \quad \text{Equation 1}$$

$$\text{Maximum Concentration}_{i j} = \frac{\text{Allowed 24-hour emission}_{i j}}{F_{24}} \quad \text{Equation 2}$$

$$\text{Maximum Concentration}_{i j} = \frac{\text{Allowed 8-hour emission}_{i j}}{F_8} \quad \text{Equation 3}$$

$$\text{Maximum Concentration}_{i j} = \frac{\text{Allowed 1-hour emission}_{i j}}{F_1} \quad \text{Equation 4}$$

105 Where:   i = an individual ~~toxic air contaminant~~TAC, from  
 106   j = an individual process or process equipment,  
 107 Allowed emission is in units of pounds per the applicable time period,  
 108 and  
 109 Maximum Concentration is in units of μg/m<sup>3</sup>.  
 110

## 5.22 v3/External

[If adopted, this would amend the January 17, 2007 version of Regulation 5.22]

111 **SECTION 3 Tier 2 - Table 2: Annual Factor for Determining Maximum Ambient**  
 112 **Concentration**

113 3.1 The maximum concentration of a ~~toxic air contaminant~~**TAC** from a process or process  
 114 equipment in the ambient air may be determined by using the appropriate annual factor  
 115 from Table 2 (adjusted if appropriate) ~~—~~ and Equation 5. The calculated maximum  
 116 concentration is then used in determining compliance with the EA goals in  
 117 ~~Regulation~~**Regulation 5.21** ~~5.21~~ by using the applicable equation in  
 118 ~~Regulation~~**Regulation 5.21** ~~5.21~~ ~~section 2.2, 2.5, or 2.8.~~

119 3.2 The use of Table 2 requires information about the dispersion characteristics of the source  
 120 of emissions, namely, the distance to the nearest property line, the height of the stack,  
 121 and, as described in section 3.7.2, the height of the influential building.

122 3.3 Table 2 shall not be used if any of the following provisions applies:

123 3.3.1 The stack height is less than 10 feet or the emission is a fugitive emission,

124 3.3.2 The influential building height is more than 100 feet,

125 3.3.3 There are terrain elevations that are more than 25% of the discharging stack height  
 126 within a distance of 500 feet from the stack, or

127 3.3.4 The analysis is for an elevated receptor, for example, a hospital air intake.

128 3.4 The annual factor value derived from Table 2 is the ratio of the annual averaged hourly  
 129 emission rate divided by the maximum annual ambient impact, in units of  
 130 (lbs/hr)/( $\mu\text{g}/\text{m}^3$ ).

131 3.5 The annual factor shall be adjusted if the averaging time of the ~~benchmark ambient~~  
 132 ~~concentration~~**(BAC)** ~~BAC~~ for the specific ~~toxic air contaminant~~**TAC** as determined  
 133 pursuant to Regulation 5.20 is different than annual. This adjustment is done as follows:

134 3.5.1 24-hr factor (lbs/hr)/( $\mu\text{g}/\text{m}^3$ ) = annual factor  $\otimes$  0.091.

135 3.5.2 8-hr factor (lbs/hr)/( $\mu\text{g}/\text{m}^3$ ) = annual factor  $\otimes$  0.046.

136 3.5.3 1-hr factor (lbs/hr)/( $\mu\text{g}/\text{m}^3$ ) = annual factor  $\otimes$  0.02.

137 3.6 Determine the maximum concentration. This is done by using the allowed hourly  
 138 emission limit (lb/hr), taking into account the intermittent emission provision of section  
 139 1.2, for a ~~toxic air contaminant~~**TAC** from a process or process equipment; the annual  
 140 factor as derived from Table 2 and, if appropriate, making the adjustment pursuant to  
 141 section 3.5; and performing the calculation in Equation 5. The resulting maximum  
 142 concentration is in units of  $\mu\text{g}/\text{m}^3$ :  
 143

$$144 \text{Maximum Concentration}_{i,j} = \frac{\text{Allowed 1-hour emission}_{i,j}}{\text{annual (adjusted) factor}} \quad \text{Equation 5}$$

145 Where: i = an individual ~~toxic air contaminant~~**TAC**, from

146 j = an individual process or process equipment, and

147 annual (adjusted) factor is the annual factor derived from Table 2,  
 148 including any adjustment required by section 3.5.

149 3.7 Instructions for deriving the annual factor from Table 2 are as follows:

150 3.7.1 Determine the height of the discharging stack from ground level in feet ( $H_s$ ).

151 3.7.2 Determine the height of the influential building in feet ( $H_b$ ). This is done by first  
 152 identifying all buildings, including buildings on-site and off-site, located within a  
 153 distance of 5 times their height from the discharging stack. Then, determine which  
 154 building is the highest. This is the influential building, with height ( $H_b$ ) in feet. If the

5.22 v3/External

[If adopted, this would amend the January 17, 2007 version of Regulation 5.22]

- 155 stack is not attached to a building, then a building height of 40% of the stack height  
156 shall be assumed.
- 157 3.7.3 Determine the ratio of the stack height to the influential building height by dividing  
158 the stack height, in feet, by the influential building height, in feet,  $H_s / H_b$ .
- 159 3.7.4 Determine the minimum distance, in feet, from the discharging stack to the property  
160 line. If there is no property line, then a distance of 25 feet shall be used.
- 161 3.7.5 Determine the appropriate annual factor from Table 2. This is done by selecting the  
162 column with the appropriate influential building height and  $H_s / H_b$  ratio, and selecting  
163 the row with the appropriate minimum distance to the property line.
- 164 3.7.5.1 If the influential building height is between values in the column headings, then  
165 use the column with the lower value or interpolate between values in the column  
166 headings.
- 167 3.7.5.2 If  $H_s$  is less than  $H_b$ , then set the influential building height equal to the stack  
168 height and use the  $1.25 H_s / H_b$  column.
- 169 3.7.5.3 If  $H_s / H_b$  is between 1 and 1.25, then select the 1.25 column.
- 170 3.7.5.4 If  $H_s / H_b$  is between 1.25 and 1.75, then use the 1.25 column or interpolate  
171 between the 1.25 and 1.75 columns.
- 172 3.7.5.5 If  $H_s / H_b$  is between 1.75 and 2.5, then use the 1.75 column or interpolate between  
173 the 1.75 and 2.5 columns.
- 174 3.7.5.6 If  $H_s / H_b$  is greater than or equal to 2.5, then use the 2.5 column.
- 175 3.7.5.7 If the minimum distance to the property line is between 2 distances in the row  
176 headings, then use the row with the lower value or interpolate between values in  
177 the row headings.
- 178 3.8 Table 2 *Annual Factor* reads as follows:

5.22 v3/External

[If adopted, this would amend the January 17, 2007 version of Regulation 5.22]

179  
180  
181

**Table 2 Annual Factor**

	Bldg Ht	10			20			30			40			
		H <sub>s</sub> /H <sub>b</sub>	1.25	1.75	2.50	1.25	1.75	2.50	1.25	1.75	2.50	1.25	1.75	2.50
		Stck Ht	12.5	17.5	25	25	35	50	37.5	52.5	75	50	70	100
<b>D</b>	25	0.0085	0.022	0.159	0.032	0.084	0.679	0.075	0.220	1.603	0.152	0.421	2.941	
<b>I</b>	50	0.0087	0.022	0.159	0.032	0.084	0.679	0.075	0.220	1.603	0.152	0.421	2.941	
<b>S</b>	75	0.0096	0.022	0.159	0.032	0.084	0.679	0.075	0.220	1.603	0.152	0.421	2.941	
<b>T</b>	100	0.011	0.023	0.159	0.033	0.084	0.679	0.075	0.220	1.603	0.152	0.421	2.941	
<b>A</b>	200	0.020	0.040	0.159	0.042	0.084	0.679	0.082	0.220	1.603	0.157	0.421	2.941	
<b>N</b>	300	0.030	0.053	0.178	0.059	0.116	0.679	0.099	0.221	1.603	0.174	0.421	2.941	
<b>C</b>	400	0.040	0.065	0.171	0.077	0.140	0.679	0.126	0.268	1.603	0.200	0.421	2.941	
<b>E</b>	500	0.051	0.077	0.189	0.094	0.164	0.679	0.153	0.318	1.603	0.243	0.505	2.941	
	600	0.063	0.091	0.222	0.112	0.188	0.746	0.181	0.368	1.603	0.287	0.588	2.941	
<b>F</b>	700	0.075	0.104	0.241	0.130	0.211	0.812	0.208	0.413	1.603	0.328	0.664	2.941	
<b>T</b>	800	0.089	0.119	0.257	0.148	0.235	0.768	0.235	0.459	1.608	0.370	0.740	2.941	
	900	0.103	0.134	0.264	0.167	0.258	0.770	0.261	0.502	1.672	0.411	0.812	2.941	
	1000	0.119	0.151	0.272	0.187	0.282	0.800	0.289	0.545	1.786	0.452	0.883	2.959	
	1500	0.209	0.245	0.318	0.290	0.406	1.080	0.428	0.756	1.953	0.654	1.214	3.521	
	2000	0.311	0.350	0.383	0.408	0.539	1.256	0.573	0.965	2.304	0.861	1.534	3.731	

5.22 v3/External

[If adopted, this would amend the January 17, 2007 version of Regulation 5.22]

182  
183  
184

**Table 2 Annual Factor (Con't)**

	Bldg Ht	50			60			70			80			
		H <sub>s</sub> /H <sub>b</sub>	1.25	1.75	2.50	1.25	1.75	2.50	1.25	1.75	2.50	1.25	1.75	2.50
		Stck Ht	62.5	87.5	125	75	105	150	87.5	123	175	100	140	200
<b>D</b>	25	0.263	0.736	4.630	0.412	1.114	6.098	0.606	1.656	8.621	0.839	2.242	8.333	
<b>I</b>	50	0.263	0.736	4.630	0.412	1.114	6.098	0.606	1.656	8.621	0.839	2.242	8.333	
<b>S</b>	75	0.263	0.736	4.630	0.412	1.114	6.098	0.606	1.656	8.621	0.839	2.242	8.333	
<b>T</b>	100	0.263	0.736	4.630	0.412	1.114	6.098	0.606	1.656	8.621	0.839	2.242	8.333	
<b>A</b>	200	0.266	0.736	4.630	0.413	1.114	6.098	0.606	1.656	8.621	0.839	2.242	8.333	
<b>N</b>	300	0.282	0.736	4.630	0.426	1.114	6.098	0.614	1.656	8.621	0.845	2.242	8.333	
<b>C</b>	400	0.312	0.736	4.630	0.455	1.114	6.098	0.641	1.656	8.621	0.868	2.242	8.333	
<b>E</b>	500	0.351	0.743	4.630	0.498	1.114	6.098	0.683	1.656	8.621	0.909	2.242	8.333	
	600	0.409	0.838	4.630	0.545	1.114	6.098	0.741	1.656	8.621	0.967	2.242	8.333	
<b>F</b>	700	0.468	0.951	4.717	0.625	1.269	6.250	0.808	1.672	8.621	1.040	2.242	8.333	
<b>T</b>	800	0.528	1.064	4.803	0.705	1.429	6.410	0.901	1.825	8.621	1.111	2.242	8.333	
	900	0.585	1.168	4.854	0.781	1.572	6.579	1.000	2.016	8.621	1.235	2.488	9.091	
	1000	0.644	1.276	4.950	0.861	1.724	6.849	1.101	2.203	9.091	1.359	2.732	10.000	
	1500	0.924	1.761	5.376	1.232	2.404	7.042	1.577	3.106	9.615	1.953	3.846	11.905	
	2000	1.205	2.222	5.882	1.603	3.049	7.353	2.041	3.968	9.615	2.525	4.808	12.821	

185

5.22 v3/External

[If adopted, this would amend the January 17, 2007 version of Regulation 5.22]

186  
187  
188**Table 2 Annual Factor (Con't)**

	Bldg Ht	90			100			
		H <sub>s</sub> /H <sub>b</sub>	1.25	1.75	2.50	1.25	1.75	2.50
		Stck Ht	113	158	225	125	175	250
<b>D</b>	25	1.126	3.049	13.514	1.458	3.876	14.286	
<b>I</b>	50	1.126	3.049	13.514	1.458	3.876	14.286	
<b>S</b>	75	1.126	3.049	13.514	1.458	3.876	14.286	
<b>T</b>	100	1.126	3.049	13.514	1.458	3.876	14.286	
<b>A</b>	200	1.126	3.049	13.514	1.458	3.876	14.286	
<b>N</b>	300	1.129	3.049	13.514	1.458	3.876	14.286	
<b>C</b>	400	1.147	3.049	13.514	1.475	3.876	14.286	
<b>E</b>	500	1.185	3.049	13.514	1.506	3.876	14.286	
	600	1.244	3.049	13.514	1.563	3.876	14.286	
<b>F</b>	700	1.316	3.049	13.514	1.634	3.876	14.286	
<b>T</b>	800	1.404	3.049	13.514	1.730	3.876	14.286	
	900	1.502	3.086	13.514	1.832	3.876	14.286	
	1000	1.634	3.289	13.514	1.931	3.876	14.286	
	1500	2.358	4.505	15.152	2.778	5.208	16.129	
	2000	3.049	5.618	16.129	3.597	6.494	18.519	

189  
190  
191  
192  
193  
194  
195

Notes for Table 2:

Bldg Ht is the building height, in feet,  
H<sub>s</sub> /H<sub>b</sub> is the ratio of the stack height to the building height,  
Stack Ht is the stack (or release) height, in feet, and  
The annual factor is in units of (lbs/hr)/(μg/m<sup>3</sup>).

**SECTION 4 Tier 3 - SCREEN3 and TSCREEN Models**

4.1 The maximum concentration of a ~~toxic air contaminant~~TAC from a process or process equipment in the ambient air may be determined by using the EPA SCREEN3 or TSCREEN models, using the appropriate algorithm for the type of emission release, for

196  
197  
198  
199

## 5.22 v3/External

[If adopted, this would amend the January 17, 2007 version of Regulation 5.22]

- 200 example, stack or fugitive. The maximum concentration derived from the use of one of  
 201 these models, with the adjustment identified in section 4.2 as appropriate, is then used in  
 202 determining compliance with the EA goals in ~~Regulation~~[Regulation 5.21](#) ~~5.21~~ by using  
 203 the applicable equation in ~~Regulation~~[Regulation 5.21](#) ~~5.21~~ ~~section 2.2, 2.5, or 2.8~~.
- 204 4.2 The resulting maximum concentration from the SCREEN3 or TSCREEN model is in  
 205 units of  $\mu\text{g}/\text{m}^3$  for a 1-hour averaging time. If the averaging time for a ~~benchmark~~  
 206 ~~ambient concentration~~ ~~BAC~~ (BAC) for the specific ~~toxic air contaminant~~ TAC as  
 207 determined pursuant to Regulation 5.20 is other than 1 hour, then the resulting maximum  
 208 concentration shall be adjusted as follows:
- 209 4.2.1 For a BAC with an 8-hour averaging time, multiply by 0.44,  
 210 4.2.2 For a BAC with a 24-hour averaging time, multiply by 0.22, and  
 211 4.2.3 For a BAC with an annual averaging time, multiply by 0.02.
- 212 4.3 The SCREEN3 model shall be run in the “regulatory default mode” as described in the  
 213 SCREEN3 User’s Guide (EPA-454/B-95-004). ~~This document is available on the~~  
 214 ~~Internet at “www.epa.gov/seram001/userg/screen/screen3d.pdf”.~~
- 215
- 216 4.4 If the TSCREEN model is used, the model inputs and options used shall be included with  
 217 the modeling results submitted to the District pursuant to Regulation 5.21.
- 218 ~~4.5 The SCREEN3 model may be downloaded for free from the Internet at “www.epa.gov/~~  
 219 ~~seram001/tt22.htm#SCREEN3”.~~
- 220 ~~4.6 The TSCREEN model may be downloaded for free from the Internet at “www.epa.gov/~~  
 221 ~~seram001/tt22.htm#TSCREEN”.~~
- 222

## SECTION 5 Tier 4 - EPA-Approved Dispersion Model

- 224 5.1 Tier 4 models.
- 225 5.1.1 After the effective date of this regulation, a stationary source using Tier 4 to  
 226 determine the The maximum concentration of a ~~toxic air contaminant~~ TAC from a  
 227 process or process equipment in the ambient air ~~shall~~ may use be determined by using  
 228 ~~the EPA Industrial Source Complex Model (ISC3) model,~~ the American  
 229 Meteorological Society/Environmental Protection Agency Regulatory Model  
 230 (AERMOD), or another appropriate model included in Appendix A *Summaries of*  
 231 *Preferred Air Quality Models* of 40 CFR Part 51 Appendix W *Guideline on Air*  
 232 *Quality Models*. The EPA Industrial Source Complex Model (ISC3) may continue to  
 233 be used on a case-by-case basis with prior approval by the District. Additionally, a  
 234 model included on the EPA list of Alternative Models (Case-by-Case) ~~), available on~~  
 235 ~~the Internet at “http://www.epa.gov/seram001/tt22.htm#altmod”~~ (formerly Appendix  
 236 B *Summaries of Alternative Air Quality Models* of 40 CFR Part 51 Appendix W)  
 237 may be used, provided that the use of the alternative model meets one of the three  
 238 conditions for approval specified in 40 CFR Part 51 Appendix W § 3.2.2(b) and prior  
 239 approval is given by the District.
- 240 5.1.2 As used in section 5.1, the “maximum concentration” shall be the value derived using  
 241 one of the following methods, as deemed applicable in section 5.2:
- 242 5.1.2.1 The calculated arithmetic mean of the maximum ambient concentrations derived  
 243 from each of five consecutive years of meteorological data. The location for this  
 244 calculated ambient concentration shall be the location associated with the highest

5.22 v3/External

[If adopted, this would amend the January 17, 2007 version of Regulation 5.22]

- 245 of the five individual maximum ambient concentrations derived by the model, or  
246 5.1.2.2 The maximum concentration derived by the model when using a single,  
247 continuous 5-year set of meteorological data.
- 248 5.1.3 The maximum concentration derived from the use of one of the models in section  
249 5.1.1 is then used in determining compliance with the EA goals in Regulation 5.21 by  
250 using the applicable equation in Regulation 5.21 ~~section 2.2, 2.5, or 2.8.~~
- 251 5.2 The applicability of the methods in section 5.1.2 is as follows:
- 252 5.2.1 If the maximum concentration is ~~required to be~~ determined ~~pursuant to Regulation~~  
253 ~~5.21 section 4.1.1.1 (by a~~ Group 1 stationary source for a Category 1 TAC), then the  
254 method in either Regulation 5.22 section 5.1.2.1 or section 5.1.2.2 may be used,
- 255 5.2.2 If the maximum concentration is ~~required to be~~ determined ~~by a~~ ~~pursuant to~~  
256 ~~Regulation 5.21 section 4.1.1.2 (Group 1 stationary source for a Category 2 TAC),~~  
257 then the method in Regulation 5.22 section 5.1.2.2 shall be used, unless the owner or  
258 operator of the stationary source notifies the District in writing by March 31, 2007,  
259 that the method in Regulation 5.22 section 5.1.2.1 will be used for the Category 2  
260 TACs.
- 261 5.2.3 If the maximum concentration is ~~required to be~~ determined ~~pursuant to Regulation~~  
262 ~~5.21 section 4.1.2 (by a~~ Group 2 stationary source for a Category 1 or Category 2  
263 TAC), then the method in Regulation 5.22 section 5.1.2.2 shall be used,
- 264 5.2.4 If ~~the maximum concentration is required to be determined pursuant to Regulation~~  
265 ~~5.21 Section 3 and~~ an administratively complete application for a construction permit  
266 ~~wasis~~ received by the District ~~on or before~~by March 31, 2007, then the method in  
267 either Regulation 5.22 section 5.1.2.1 or section 5.1.2.2 may be used, or
- 268 5.2.5 If ~~the maximum concentration is required to be determined pursuant to Regulation~~  
269 ~~5.21 Section 3 and~~ an administratively complete application for a construction permit  
270 is received by the District after March 31, 2007, then the method in Regulation 5.22  
271 section 5.1.2.2 shall be used.
- 272 5.3 In running one of the models allowed pursuant to section 5.1.1, the model shall be set to  
273 report the maximum concentration for the averaging time period consistent with the  
274 averaging time established for the ~~toxic air contaminant~~TAC pursuant to Regulation 5.20,  
275 except, if using the method in section 5.1.2.2, the model is run with a combined 5-year  
276 meteorological data set and the averaging time period for the ~~toxic air contaminant~~TAC  
277 pursuant to Regulation 5.20 is annual, then the model shall be set to report the maximum  
278 concentration for the “period.”
- 279 5.4 The ISC3 model shall be run in the “regulatory default mode” as described in the *User’s*  
280 *Guide for the Industrial Source Complex (ISC3) Dispersion Models*, Volume 1 (EPA-  
281 454/B-95-003a). ~~This document is available on the Internet at~~  
282 ~~“www.epa.gov/scram001/userg/regmod/isc3v1.pdf”.~~
- 283 5.5 The AERMOD model shall be run in the “regulatory default mode” as described in the  
284 User’s Guide for the AMS/EPA REGULATORY MODEL – AERMOD, EPA-454/B-03-  
285 001. Non-regulatory modeling options require approval by the District. The data  
286 requirements for AERMOD are source specific and the AERMOD Implementation Guide  
287 should be consulted regarding the recommended use of AERMOD for a particular  
288 situation.
- 289 ~~5.5 The ISC3 model may be downloaded for free from the Internet at~~

November 17, 2010

5.22 v3/External

[If adopted, this would amend the January 17, 2007 version of Regulation 5.22]

290 ~~“[www.epa.gov/seram001/tt22.htm#ISC](http://www.epa.gov/seram001/tt22.htm#ISC)”. The AERMOD model may be downloaded for~~  
291 ~~free from the Internet at “[www.epa.gov/seram001/tt26.htm#aermod](http://www.epa.gov/seram001/tt26.htm#aermod)”.~~

292 **SECTION 6 Model and Guidance Availability**

293 **6.1 Referenced models, including SCREEN 3, TSCREEN, ISC3 and AERMOD and**  
294 **Associated User and Implementation Guides, may be downloaded for free at**  
295 **[www.epa.gov](http://www.epa.gov).**

296

297

298

299 Adopted v1/6-21-05; effective 7-1-05; amended v2/1-17-07, v3