February 16, 2007

The “Indoor Air Background” concentrations in this table document the values used to calculate the MCP GW-2 Standards. These values are NOT recommended as suitable indoor air background concentrations for use in MCP risk characterizations and cannot be cited for MCP purposes.

MassDEP is currently undertaking a review of typical indoor air concentrations with the goal of incorporating information form more recent studies into MassDEP’s “Indoor Air Background” values. Until these values are updated, MassDEP recommends that site-specific conditions or more recently published literature values be relied upon when attempting to define background values for indoor air.

Users are directed to MassDEP’s 2002 Air Sampling Guidance for information on using site-specific information to determine the significance of potential indoor air impacts. See http://mass.gov/dep/service/compliance/riskasmt.htm#air. For a list of references of recent indoor air studies, see http://mass.gov/dep/cleanup/iawg.htm.

Indoor Air Contaminants Comparison Table

DEP/BWSC/NERO
August 2002

Compound	20% RFC		1E-06 ELCR Level		50% Odor Thresh		MCP-GW2 Bkgrnd Ind Air		ES&T Bkgrnd Ind Air		AAL		TEL		Long Term Indoor Air Guidelines		Conversion Factor
	ug/m^3	ppbv	ug/m^3	ppbv	ug/m^3	ppbv	ug/m^3	ppbv	ug/m^3	ppbv	ug/m^3	ppbv	ug/m^3	ppbv	ug/m^3	ppbv	ug/m^3/ppbv
Benzene	1.8	0.55	0.13	0.04	4890	1505	21	6.46	16.78	5.16	0.12	0.04	1.74	0.54	21	6.46	3.25
ethylbenzene	200	45	nl	nl	2000	454	10	2.27	12.73	2.89	300	69.1	300	69.1	200	45.35	4.41
Toluene	80	21	nl	nl	30000	7833	29	7.57	28.3	7.39	20	5.31	80	21.23	80	20.89	3.83
Xylenes	12	2.72	nl	nl	441	100	3	0.68	12.54	2.84	11.8	2.72	11.8	2.72	12	2.72	4.41
carbon tetrachloride	86	13.5	0.07	0.01	63000	9859	1	0.16	2.56	0.40	0.07	0.01	85.5	13.61	1	0.16	6.39
chlorobenzene	4	0.85	nl	nl	1000	214	10	2.14	nl	nl	6.26	1.36	93.9	20.41	10	2.14	4.68
chloroform	132	26.6	0.04	0.01	421600	85000	3	0.60	4.13	0.83	0.04	0.01	133	27.21	3	0.6	4.96
dichlorobenzene-,p	160	26.2	nl	nl	1100	180	0.5	0.08	24.4	3.99	0.18	0.03	123	20.41	160	26.2	6.11
dichloroethane-1,1	100	24.3	nl	nl	125000	30340	nl	Nl	nl	nl	nl	nl	nl	nl	100	24.27	4.12
dichloroethane-1,2	11	2.68	0.039	0.009	2424	590	nl	Nl	nl	nl	0.04	0.01	11.01	2.72	0.039	0.009	4.11
dichloroethene-1,1	40	10	nl	nl	125000	31017	6.5*	1.61	nl	nl	nl	nl	nl	nl	40	10	4.03
dichloroethene-1,2 total	220	55	nl	nl	nl	nl	nl	Nl	nl	nl	108	27.2	216	54.4	220	55	4.03
Ethylene dibromide	0.04	0.01	0.005	0.001	200000	25608	nl	Nl	nl	nl	nl	nl	nl	nl	0.005	0.001	7.81
methylene chloride	600	170	2.13	0.60	540000	152975	10**	2.83	nl	nl	0.24	0.07	9.45	2.72	10**	2.83	3.53
Styrene	200	46.2	1.75	0.40	1360	314	5	1.15	nl	nl	2	0.47	200	47	5	1.15	4.33
tetrachloroethane-1122	18.6	2.66	0.02	0.002	10470	1496	0.01	0.0014	0.10	0.01	0.02	0.003	18.67	2.72	0.02	0.002	7
tetrachloroethene	920	134	0.02	0.003	31730	4605	11	1.60	21.1	3.06	0.02	0.003	922	136	11	1.6	6.89
trichloroethane-111	1040	187	nl	nl	65127	11735	30	5.41	271	48.9	1038	190	1038	190	1040	187	5.55
trichloroethene	36	6.59	0.59	0.11	1000000	183150	5	0.92	7.35	1.35	0.61	0.11	36.5	6.80	5	0.92	5.46
vinyl chloride	3.4	1.31	0.01	0.005	771244	296632	nl	Nl	nl	nl	0.38	0.15	3.47	1.36	0.01	0.005	2.6
Acetone	160	66.1	nl	nl	30862	12753	6	2.48	19.3	7.96	160	68	161	68.0	160	66.1	2.42
Mtbe	600	164	nl	nl	nl	nl	nl	Nl	nl	nl	nl	nl	nl	nl	600	164	3.66
dioxane-1,4	24	6.6	0.24	0.07	nl	nl	nl	Nl	3.77	1.03	0.24	0.07	24.49	6.80	3.77	1.03	3.66
methyl-ethyl-ketone	200	67.8	nl	nl	32000	10847	42	14.24	27.3	9.24	10	3.39	200	67.8	200	67.8	2.95
methyl-isobutyl-ketone	16	3.84	nl	nl	9700	2326	2	0.48	nl	nl	55.7	13.61	55.7	13.61	16	3.84	4.17
C5-C8 Aliphatics	40	10.3	nl	nl	nl	nl	85	22	nl	nl	nl	nl	nl	nl	85	22	3.87
C9-C12 Aliphatics	400	64.5	nl	nl	nl	nl	90	14.5	nl	nl	nl	nl	nl	nl	400	64.5	6.20
C9-C10 Aromatics	12	2.4	nl	nl	nl	nl	80	16	nl	nl	nl	nl	nl	nl	80	16	4.99
C9-C18 Aliphatics	400	56.6	nl	nl	nl	nl	100	14	nl	nl	nl	nl	nl	nl	400	56.6	7.07
C11-C22 Aromatics	14	2.2	nl	nl	nl	nl	<50	<8	nl	nl	nl	nl	nl	nl	14	2.2	6.24

Indoor Air Table Notes:

1. Table prepared by Jack Miano, DEP/BWSC/Compliance, October 1995/ last revised 2002

2. The Reference Concentrations and 1E-6 Excess Lifetime Cancer Risk Levels were taken from the DEP Office of Research & Standards Toxicity Database, December 1999

3. The Allowable Ambient Limits (AALs) and the Threshold Effects Exposure Limits (TELs) were taken from the DEP Ambient Air Guidelines, December 1995

4. Petroleum hydrocarbon range Reference Concentrations were taken from, “Characterizing Risks Posed By Petroleum Contaminated Sites: Implementation of MADEP VPH/EPH Approach”, October 31, 1997, Draft, Table 4-11

5. ES&T Bkgrnd Ind Air = "Distribution of Volatile Organic Chemicals in Outdoor and Indoor Air, A National VOCs Data Base", J. Shah & H. Singh, Env. Sci. Technol., Vol. 22, No.12,1988

6. Background Ambient Indoor Air Levels, Reference: "DEP, Background Documentation for the Development of MCP Numerical Standards.", April 1994, Table 4.2

7. 20% RFC = 0.2 * RFC, RFC from DEP ORS Toxicity Database or IRIS Database

8. 1E-6 ELCR Level = (10E-6) / (unit risk), unit risk dimensions = $1/ug/m^3$

9. nl = not listed

10. *=Background value from the EPA TEAM Study

11. **=Ref. Stolwijk, J.A.J., 19