

TABLE OF RISK-BASED CONCENTRATIONS (ABRIDGED FOR HOT PROGRAM)

Contaminated Medium	SOIL mg/Kg (ppm)										SOIL mg/Kg (ppm)					SOIL mg/Kg (ppm)					GROUNDWATER (µg/L (ppb))								
	Soil Ingestion, Dermal Contact, and Inhalation (RBC _{SS})										Vapor Intrusion into Air (RBC _S)					Leaching to Groundwater (RBC _{SW})					Ingestion & Inhalation from Tapwater (RBC _{LW})								
Exposure Pathway																													
Receptor Scenario	Residential		Urban Residential		Occupational		Construction Worker		Excavation Worker		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		
Direct or Indirect Pathway (see notes)	DC		DC		DC		DC		DC		IVS		IVS		IVS		IS		IS		IS		DS		DS		DS		
Contaminant of Concern	Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		
Benzene	c, v	7.3		24		34		340		9,500	>Csat	0.080		0.22		1.2		0.0093		0.042		0.053		0.39		1.7		2.2	
Toluene	nc, v	5,800	>Csat	12,000	>Csat	77,000	>Csat	24,000	>Csat	680,000	>Csat	-	>Csat	-	>Csat	-	>Csat	140		280		-	>Csat	2,300		4,600		9,200	
Ethylbenzene	c, v	30		110		140		1,600	>Csat	44,000	>Csat	0.82		2.2		12		0.16		0.77		0.90		1.4		6.7		7.8	
Xylenes	nc, v	1,400	>Csat	2,900	>Csat	25,000	>Csat	19,000	>Csat	540,000	>Csat	100		100		-	>Csat	25		50		100		200		410		850	
Propylbenzene, iso-	nc, v	3,500	>Csat	7,000	>Csat	53,000	>Csat	24,000	>Csat	670,000	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	680		1,400		2,800	
Trimethylbenzene, 1,2,4-	nc, v	110		220		2,000	>Csat	2,000	>Csat	54,000	>Csat	82		82		1,000		16		33		68		15		29		61	
Trimethylbenzene, 1,3,5-	nc, v	780	>Csat	1,600	>Csat	10,000	>Csat	3,100	>Csat	86,000	>Csat	-	>Max	-	>Max	-	>Max	92		180		-	>Csat	360		730		1,500	
Acenaphthene	nc, v	4,700	>Csat	9,400	>Csat	61,000	>Csat	19,000	>Csat	520,000	>Csat	-	>Max	-	>Max	-	>Max	-	>Csat	-	>Csat	-	>Csat	2,200		-	>S	-	
Anthracene	nc, v	23,000	>Csat	47,000	>Csat	310,000	>Csat	93,000	>Csat	-	>Max	-	>Max	-	>Max	-	>Max	-	>Csat	-	>Csat	-	>Csat	-	>S	-	>S	-	
Benz[a]anthracene	c, nv	0.15		0.34		2.7		21	>Csat	590	>Csat	-	NV	-	NV	-	NV	3.5		10		-	>Csat	0.029		0.088		0.56	
Benzo[b]fluoranthene	c, v	0.15		0.34		2.7		21	>Csat	590	>Csat	-	>Csat	-	>Csat	-	>Csat	4.0		-		>Csat	-	>Csat	0.011		0.039		0.16
Benzo[k]fluoranthene	c, nv	1.5		3.4		27	>Csat	210	>Csat	5,900	>Csat	-	NV	-	NV	-	NV	-	>Csat	-	>Csat	-	>Csat	0.29		-	>S	-	
Benzo[a]pyrene	c, nv	0.015		0.034		0.27		2.1		59	>Csat	-	NV	-	NV	-	NV	0.90		2.7		-	>Csat	0.0029		0.0088		0.056	
Chrysene	c, v	14	>Csat	32	>Csat	250	>Csat	2,100	>Csat	57,000	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	0.16		0.66		-	
Dibenz[a,h]anthracene	c, nv	0.015		0.034		0.27		2.1		59	>Csat	-	NV	-	NV	-	NV	3.4		-		>Csat	-	>Csat	0.0029		0.0088		0.056
Fluoranthene	nc, v	2,300	>Csat	4,600	>Csat	29,000	>Csat	8,900	>Csat	250,000	>Csat	-	>Max	-	>Max	-	>Max	-	>Csat	-	>Csat	-	>Csat	-	>S	-	>S	-	
Fluorene	nc, v	3,100	>Csat	6,300	>Csat	41,000	>Csat	12,000	>Csat	340,000	>Csat	-	>Max	-	>Max	-	>Max	-	>Csat	-	>Csat	-	>Csat	-	>Csat	1,500		>S	
Indeno[1,2,3-cd]pyrene	c, nv	0.15		0.34		2.7	>Csat	21	>Csat	590	>Csat	-	NV	-	NV	-	NV	-	>Csat	-	>Csat	-	>Csat	-	>S	-	>S	-	
Naphthalene	c, v	4.6		25		23		580	>Csat	16,000	>Csat	6.5		18		99		0.087		0.47		0.44		0.14		0.78		0.72	
Pyrene	nc, v	1,700	>Csat	3,400	>Csat	21,000	>Csat	6,700	>Csat	190,000	>Csat	-		-		-		-	>Csat	-	>Csat	-	>Csat	-	>S	-	>S	-	
MTBE (methyl t-butyl ether)	c, v	220		720		1,000		10,000	>Csat	290,000	>Csat	4.9		13		74		0.092		0.41		0.52		12		53		67	
EDB (1,2-dibromoethane)	c, v	0.14		0.53		0.68		8.1		230		0.0095		0.026		0.14		0.000081		0.00039		0.00044		0.0063		0.031		0.034	
EDC (1,2-dichloroethane)	c, v	3.2		12		15		180		5,000	>Csat	0.039		0.11		0.59		0.0014		0.0068		0.0077		0.14		0.69		0.78	
Lead	NA, nv	400	L	400	L	800	L	800	L	800	L	-	NV	-	NV	-	NV	30	L	30	L	30	L	15	L	15	L	15	
Generic Gasoline	nc, v	1,200		2,500		20,000		9,700		>Max		94		94		>Max		31		31		130		110		110		450	
Generic Diesel/Heating Oil	nc, v	1,100		2,200		14,000		4,600		>Max		>Max		>Max		>Max		9,500		9,500		>Max		100		100		430	
Generic Mineral/Insulating Oil	nc, nv	2,800		5,700		36,000		11,000		>Max		>Max		>Max		>Max		>Max		>Max		>Max		300		300		1,300	

Contaminated Medium		GROUNDWATER (µg/L (ppb))						GROUNDWATER (µg/L (ppb))		Soil Gas (µg/m ³)						AIR (µg/m ³)					
Exposure Pathway		Vapor Intrusion into Air (RBC _w)						GW in Excavation (RBC _{we})		Inhalation (RBC _{sv})						Inhalation (RBC _{air})					
Receptor Scenario		Residential		Urban Residential		Occupational		Construction & Excavation Worker		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational	
Direct or Indirect Pathway (see notes)		IVW		IVW		IVW		DS		ICA		ICA		ICA		DCA		DCA		DCA	
Contaminant of Concern	Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note
Benzene	c, v	190		510		2,800		1,700		62		170		1,600		0.31		0.85		1.6	
Toluene	nc, v	-	>S	-	>S	-	>S	210,000		1,000,000		1,000,000		2.2E+07		5,200		5,200		22,000	
Ethylbenzene	c, v	490		1,300		7,400		4,400		190		530		4,900		0.97		2.7		4.9	
Xylenes	nc, v	58,000		58,000		-	>S	23,000		21,000		21,000		440,000		100		100		440	
Propylbenzene, iso-	nc, v	-	>S	-	>S	-	>S	-	>S	83,000		83,000		1,800,000		420		420		1,800	
Trimethylbenzene, 1,2,4-	nc, v	5,000		5,000		-	>S	1,700		1,500		1,500		31,000		7.3		7.3		31	
Trimethylbenzene, 1,3,5-	nc, v	-	>S	-	>S	-	>S	23,000		-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv
Acenaphthene	nc, v	-	>S	-	>S	-	>S	-	>S	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv
Anthracene	nc, v	-	>S	-	>S	-	>S	-	>S	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv
Benz[a]anthracene	c, nv	-	NV	-	NV	-	NV	9.1		-	NV	-	NV	-	NV	0.0087		0.018		0.11	
Benzo[b]fluoranthene	c, v	-	>S	-	>S	-	>S	-	>S	1.7		3.6		-	>Pv	0.0087		0.018		0.11	
Benzo[k]fluoranthene	c, nv	-	NV	-	NV	-	NV	-	>S	-	NV	-	NV	-	NV	0.0087		0.018		-	>Pv
Benzo[a]pyrene	c, nv	-	NV	-	NV	-	NV	0.53		-	NV	-	NV	-	NV	0.00087		0.0018		0.011	
Chrysene	c, v	-	>S	-	>S	-	>S	-	>S	-	>Pv	-	>Pv	-	>Pv	0.087		0.18		1.1	
Dibenz[a,h]anthracene	c, nv	-	NV	-	NV	-	NV	0.21		-	NV	-	NV	-	NV	-	>Pv	-	>Pv	-	>Pv
Fluoranthene	nc, v	-	>S	-	>S	-	>S	-	>S	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv
Fluorene	nc, v	-	>S	-	>S	-	>S	-	>S	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv
Indeno[1,2,3-cd]pyrene	c, nv	-	NV	-	NV	-	NV	-	>S	-	NV	-	NV	-	NV	-	>Pv	-	>Pv	-	>Pv
Naphthalene	c, v	670		1,800		10,000		500		14		39		360		0.072		0.20		0.36	
Pyrene	nc, v	-	>S	-	>S	-	>S	-	>S	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv
MTBE (methyl t-butyl ether)	c, v	39,000		110,000		590,000		62,000		1,900		5,100		47,000		9.4		26		47	
EDB (1,2-dibromoethane)	c, v	46		130		690		28		0.81		2.2		20		0.0041		0.011		0.020	
EDC (1,2-dichloroethane)	c, v	250		690		3,800		630		19		51		470		0.094		0.26		0.47	
Lead	NA, nv	-	NV	-	NV	-	NV	-	>S	-	NV	-	NV	-	NV	-	>Pv	-	>Pv	-	>Pv
Generic Gasoline	nc, v	22,000		22,000		>S		14,000		79,000		79,000		1,700,000		390		390		1,700	
Generic Diesel/Heating Oil	nc, v	>S		>S		>S		>S		21,000		21,000		440,000		100		100		440	
Generic Mineral/Insulating Oil	nc, nv	>S		>S		>S		>S		30,000		30,000		620,000		150		150		620	

NOTES:

Direct or Indirect Pathway Codes have the following meanings: DC means it is a direct contact pathway with a limiting value of Csat. IVS means it is an indirect pathway with a limiting value of Csat. DS means it is a direct contact pathway with a limiting value equal to the solubility, S. IVW means it is an indirect pathway with a limiting value equal to the solubility, S. DPA or ICA means it has a limiting value equal to the vapor pressure, Pv.

The symbols in the "Note" columns are explained below. The references can be found in *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* (DEQ, 2003)

- c This chemical is a known or suspected carcinogen. The RBCs in this row were calculated using equations for carcinogens. To calculate the appropriate RBCs for non-carcinogenic effects, you need to first change the toxicity basis in the spreadsheet from "c" to "nc", and then re-calculate the RBCs. You should use the lower of the calculated RBCs for each exposure scenario. This summary table (but not the associated spreadsheet) includes the lower of the carcinogenic and non-carcinogenic RBCs.
- >Csat This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to "ChemData" page for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product might be present. See Section B.2.1.4 for additional information.
- L The values for lead reported in this table are not derived from the equations developed in Appendix B. See Section B.3.4 for the source of the lead numbers and information on applying them.
- >Max The constituent RBC for this pathway is greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, these substances are not expected to pose risks in the scenario shown.
- NA Not Available.
- nc This chemical is a noncarcinogen. The RBCs in this row were calculated using equations for noncarcinogens described in Appendix B.
- nv This chemical is considered "nonvolatile" for purposes of the exposure calculations.
- >Pv The air concentration reported for the RBC exceeds the vapor pressure of the pure chemical. It can be assumed that this constituent cannot create an unacceptable risk by this pathway. See Section B.2.1.4 for additional information.
- >S This groundwater RBC exceeds the solubility limit. Refer to Appendix D for the corresponding value of S. Groundwater concentrations in excess of S indicate that free product may be present. See Section B.2.1.4 for additional information.
- v This chemical is classified as "volatile" for purposes of the exposure calculations in this document.
- * Leaching-to-Groundwater RBCs are not provided for inorganic chemicals. If this pathway is of concern, then site-specific leaching tests must be performed.
- When "Show All Values" is not selected on the Main Menu, all RBC values for indirect pathways that exceed a limit (Csat, S, or Pv) are removed from the table and replaced with "-".