Table 7-1
Tier 1 Risk-Based Target Levels for Residential Land Use

Chemicals of Concern	Air	Surficial Soil	Subsurface Soil	Soil Vapor	Groundwater		
	Indoor	Ingestion, Inhalation (Vapors and Particulates), and Dermal Contact	Indoor Inhalation of Vapor Emissions	Indoor Inhalation of Vapor Emissions	Indoor Inhalation of Vapor Emissions	Dermal Contact	Domestic Water Use
	[mg/m^3-air]	[mg/kg]	[mg/kg]	[mg/m^3-air]	[mg/L]		
Benzene	4.98E-03	1.77E+02 *	3.78E-01	1.90E+02	1.00E+00	2.92E-01	5.00E-03 m
Toluene	2.92E+00	6.21E+03 *	4.99E+02 *	1.13E+05 +	5.08E+02 #	8.58E+00	1.00E+00 m
Ethylbenzene	6.06E-01	7.45E+03 *	1.93E+02 *	2.72E+04 +	1.03E+02 #	6.34E+00 #	7.00E-01 m
Xylenes (total)	6.06E-02	7.83E+03 *	2.47E+01	2.91E+03	1.18E+01	2.13E+01 #	1.00E+01 m
Ethylene dibromide (EDB)	4.27E-05	3.02E+00	8.61E-02	6.62E+00	2.30E-01	1.41E-02	5.00E-05 m
Ethylene dichloride (EDC)	9.86E-04	6.65E+01	1.32E-01	3.19E+01	8.62E-01	3.53E-01	5.00E-03 m
Methyl tertiary butyl ether (MTBE)	9.86E-02	3.45E+03	2.16E+01	4.14E+03	1.81E+02	2.35E+01	1.28E-01
Acenaphthene	1.25E-01	3.13E+03 *	6.69E+04 *	1.00E+04 +	1.61E+03 #	1.35E+00	1.65E-01
Anthracene	6.27E-01	1.57E+04 *	3.90E+05 *	6.50E+04 +	2.29E+03 #	3.17E+00 #	6.96E-01 #
Benzo(a)anthracene	2.30E-04	6.20E+00	2.60E+05 *	1.49E+01 +	1.10E+02 #	1.74E-04	1.03E-04
Benzo(a)pyrene	2.30E-05	6.20E-01	2.25E+05 *	1.70E+00 +	3.73E+01 #	1.02E-05	2.00E-04 m
Benzo(b)fluoranthene	2.30E-04	6.19E+00	5.55E+04 *	3.42E+01 +	7.65E+00 #	1.01E-04	6.27E-05
Benzo(k)fluoranthene	2.30E-04	6.20E+01 *	6.83E+06 *	3.14E+01 +	9.37E+02 #	1.04E-03 #	6.46E-04
Chrysene	2.30E-03	5.99E+02 *	1.92E+05 *	3.12E+02 +	8.17E+01 #	1.74E-02 #	1.03E-02 #
Dibenzo(a,h)anthracene	2.19E-05	6.20E-01	2.22E+07 *	5.86E-01 +	9.85E+02 #	6.60E-06	4.21E-06
Fluoranthene	8.36E-02	2.28E+03 *	9.01E+06 *	9.27E+03 +	1.42E+04 #	3.00E-01 #	1.64E-01
Fluorene	8.36E-02	2.20E+03 *	2.46E+05 *	7.73E+03 +	3.01E+03 #	6.27E-01	1.03E-01
Naphthalene	7.48E-04	3.63E+01 *	2.59E+01 *	4.26E+01 +	2.25E+00 #	2.06E-02	1.09E-03
Pyrene	6.27E-02	1.71E+03 *	1.07E+07 *	7.69E+03 +	1.73E+04 #	1.64E-01 #	9.61E-02
TPH-GRO	1.18E+01	3.54E+05 *	3.85E+02	3.97E+05 +	2.08E+01	NA	1.81E+01
TPH-DRO	1.45E+00	1.40E+05 *	4.15E+03 *	4.87E+04 +	1.17E+02 #	NA	3.43E+01 #
TPH-ORO	NA	1.24E+05 *	NA	NA	NA	NA	3.18E+01 #
Aliphatics - > C6-C8	1.11E+01	3.44E+05 *	2.53E+02 *	3.72E+05 +	9.94E+00 #	NA	1.73E+01 #
Aliphatics - > C8-C10	6.06E-01	7.45E+03 *	5.24E+01	2.04E+04	3.40E-01	NA	6.83E-01 #
Aliphatics - >C10-C12	6.06E-01	5.88E+03 *	2.60E+02 *	2.04E+04 +	2.27E-01 #	NA	6.83E-01 #

Aliphatics - >C12-C16	6.06E-01	5.88E+03	*	1.18E+03	*	2.04E+04	+	5.23E-02	#	NA		1.56E+00	#
Aliphatics - >C16-C21	NA	1.22E+05	*	NA		NA		NA		NA		3.13E+01	#
Aliphatics - >C21-C35	NA	1.22E+05	*	NA		NA		NA		NA		3.13E+01	#
Aromatics - >C8-C10	1.19E-01	2.84E+03	*	8.03E+01		4.00E+03		1.05E+01		NA		1.72E-01	
Aromatics - >C10-C12	1.19E-01	2.26E+03	*	4.33E+02	*	4.00E+03	+	3.34E+01	#	NA		1.72E-01	
Aromatics - >C12-C16	1.19E-01	2.26E+03	*	2.28E+03	*	4.00E+03	+	8.29E+01	#	NA		1.72E-01	
Aromatics - >C16-C21	NA	1.72E+03	*	NA		NA		NA		NA		4.69E-01	
Aromatics - >C21-C35	NA	1.72E+03	*	NA		NA		NA		NA		4.69E-01	#
Tertiary-amyl-methyl-ether (TAME)	4.80E-02	2.50E+03	*	5.86E+00		2.31E+03		2.06E+01		1.86E+01		8.28E-02	
Tertiary-butyl-alcohol (TBA)	1.80E-01	6.11E+03		1.03E+03		7.07E+03		1.32E+04		1.52E+02		2.86E-01	
Ethyl-tert-butyl-ether (ETBE)	1.80E-01	7.81E+01		2.58E+01		8.69E+03		9.90E+01		5.00E-01		1.44E-02	
Diisopropyl ether (DIPE)	2.30E-01	6.91E+03	*	3.30E+01		1.13E+04		8.19E+01		3.48E+01		3.51E-01	
Ethanol	1.13E+00	2.62E+05	*	7.17E+03		3.28E+04		1.20E+05		2.48E+05		5.15E+02	
Methanol	2.30E+00	3.67E+04		2.94E+04		5.11E+04		2.77E+05		6.63E+03		7.81E+00	
Arsenic	5.98E-06	3.89E+00		N/A		N/A		N/A		1.58E-01		1.00E-02	m
Barium	2.92E-04	1.50E+04		N/A		N/A		N/A		1.12E+03		2.00E+00	m
Cadmium	1.42E-05	1.68E+01		N/A		N/A		N/A		6.25E-01		5.00E-03	m
Chromium (III) total chromium	6.06E-05	7.46E+04		N/A		N/A		N/A		8.38E+03		1.00E-01	m
Chromium (VI)	2.14E-06	1.47E-01		N/A		N/A		N/A		2.83E-03		3.37E-06	
Lead	NA	2.60E+02		2.60E+02		N/A		N/A		NA		1.50E-02	m
Selenium	1.19E-04	3.80E+02		N/A		N/A		N/A		2.79E+01		5.00E-02	m

Notes:

NA: Not available N/A: Not applicable m: Target level is MCL. Soil concentrations are presented on a dry weight basis.

***:** Calculated target level exceeds effective/saturated soil concentration for gasoline. Calculated value is shown.

#: Calculated target level exceeds effective/solubility for gasoline. Calculated value is shown.

+: Calculated target level exceeds effective/saturated vapor concentration for gasoline. Calculated value is shown.

Table 7-2
Tier 1 Risk-Based Target Levels for Non-Residential Land Use

Chemicals of Concern	Air	Surficial Soil	Subsurface Soil	Soil Vapor	Groundwater	
	Indoor	Ingestion, Inhalation (Vapor Emissions and Particulates), and Dermal Contact	Indoor Inhalation of Vapor Emissions	Indoor Inhalation of Vapor Emissions	Indoor Inhalation of Vapor Emissions	Dermal Contact
	[mg/m^3-air]	[mg/kg]	[mg/kg]	[mg/m^3-air]	[mg/L]	
Benzene	1.06E-02	7.63E+02 *	1.98E+00	9.98E+02	5.25E+00	1.06E+00
Toluene	9.54E+00	8.11E+04 *	4.01E+03 *	9.09E+05 +	4.08E+03 #	4.76E+01
Ethylbenzene	1.98E+00	9.75E+04 *	1.55E+03 *	2.18E+05 +	8.32E+02 #	3.51E+01 #
Xylenes (total)	1.98E-01	1.04E+05 *	1.99E+02 *	2.34E+04 +	9.49E+01 #	1.18E+02 #
Ethylene dibromide (EDB)	9.09E-05	1.25E+01	4.52E-01	3.47E+01	1.21E+00	5.15E-02
Ethylene dichloride (EDC)	2.10E-03	2.76E+02	6.91E-01	1.67E+02	4.52E+00	1.29E+00
Methyl tertiary butyl ether (MTBE)	2.10E-01	1.49E+04 *	1.13E+02	2.17E+04	9.46E+02	8.58E+01
Acenaphthene	4.09E-01	3.07E+04 *	5.38E+05 *	8.05E+04 +	1.29E+04 #	7.50E+00 #
Anthracene	2.04E+00	1.54E+05 *	3.14E+06 *	5.23E+05 +	1.84E+04 #	1.76E+01 #
Benzo(a)anthracene	4.89E-04	2.11E+01	1.36E+06 *	7.83E+01 +	5.79E+02 #	6.37E-04
Benzo(a)pyrene	4.89E-05	2.11E+00	1.18E+06 *	8.93E+00 +	1.95E+02 #	3.74E-05
Benzo(b)fluoranthene	4.89E-04	2.10E+01 *	2.91E+05 *	1.79E+02 +	4.01E+01 #	3.68E-04
Benzo(k)fluoranthene	4.89E-04	2.11E+02 *	3.58E+07 *	1.65E+02 +	4.91E+03 #	3.80E-03 #
Chrysene	4.89E-03	1.99E+03 *	1.01E+06 *	1.63E+03 +	4.28E+02 #	6.37E-02 #
Dibenzo(a,h)anthracene	4.65E-05	2.11E+00	1.16E+08 *	3.07E+00 +	5.16E+03 #	2.41E-05
Fluoranthene	2.73E-01	2.18E+04 *	7.25E+07 *	7.45E+04 +	1.14E+05 #	1.66E+00 #
Fluorene	2.73E-01	2.07E+04 *	1.98E+06 *	6.22E+04 +	2.42E+04 #	3.48E+00 #
Naphthalene	1.59E-03	1.19E+02 *	1.36E+02 *	2.23E+02 +	1.18E+01 #	7.51E-02 #
Pyrene	2.04E-01	1.64E+04 *	8.64E+07 *	6.18E+04 +	1.39E+05 #	9.07E-01 #
TPH-GRO	3.85E+01	4.65E+06 *	3.10E+03 *	3.19E+06 +	1.67E+02 #	NA
TPH-DRO	4.73E+00	1.41E+06 *	3.34E+04 *	3.92E+05 +	9.38E+02 #	NA

TPH-ORO	NA	1.25E+06	*	NA		NA		NA		NA		
Aliphatics - > C6-C8	3.61E+01	4.52E+06	*	2.03E+03	*	2.99E+06	+	7.99E+01	#	NA		
Aliphatics - > C8-C10	1.98E+00	9.75E+04	*	4.21E+02	*	1.64E+05	+	2.73E+00	#	NA		
Aliphatics - >C10-C12	1.98E+00	5.98E+04	*	2.09E+03	*	1.64E+05	+	1.82E+00	#	NA		
Aliphatics - >C12-C16	1.98E+00	5.98E+04	*	9.50E+03	*	1.64E+05	+	4.21E-01	#	NA		
Aliphatics - >C16-C21	NA	1.23E+06	*	NA		NA		NA		NA		
Aliphatics - >C21-C35	NA	1.23E+06	*	NA		NA		NA		NA		
Aromatics - >C8-C10	3.89E-01	3.72E+04	*	6.46E+02	*	3.22E+04	+	8.44E+01	#	NA		
Aromatics - >C10-C12	3.89E-01	2.33E+04	*	3.48E+03	*	3.22E+04	+	2.69E+02	#	NA		
Aromatics - >C12-C16	3.89E-01	2.33E+04	*	1.83E+04	*	3.22E+04	+	6.67E+02	#	NA		
Aromatics - >C16-C21	NA	1.65E+04	*	NA		NA		NA		NA		
Aromatics - >C21-C35	NA	1.65E+04	*	NA		NA		NA		NA		
Tertiary-amyl-methyl-ether (TAME)	1.57E-01	3.29E+04	*	4.71E+01		1.86E+04		1.66E+02		1.03E+02		
Tertiary-butyl-alcohol (TBA)	5.86E-01	8.03E+04	*	8.26E+03		5.69E+04		1.06E+05		8.44E+02		
Ethyl-tert-butyl-ether (ETBE)	5.86E-01	1.02E+03		2.07E+02		6.99E+04		7.96E+02		2.77E+00		
Diisopropyl ether (DIPE)	7.50E-01	9.07E+04	*	2.65E+02		9.12E+04		6.59E+02		1.93E+02		
Ethanol	3.68E+00	3.55E+06	*	5.77E+04	*	2.64E+05	+	9.66E+05	#	1.37E+06	#	
Methanol	7.50E+00	4.81E+05	*	2.36E+05	*	4.11E+05	+	2.23E+06	#	3.68E+04		
Arsenic	1.27E-05	1.59E+01		N/A		N/A		N/A		5.78E-01		
Barium	9.54E-04	1.81E+05		N/A		N/A		N/A		6.19E+03		
Cadmium	3.03E-05	7.48E+01		N/A		N/A		N/A		2.28E+00		
Chromium (III) total chromium	1.98E-04	4.72E+05		N/A		N/A		N/A		4.65E+04		
Chromium (VI)	4.54E-06	6.39E-01		N/A		N/A		N/A		1.03E-02		
Lead	NA	6.60E+02		6.60E+02		N/A		N/A		NA		
Selenium	3.89E-04	4.78E+03		N/A		N/A		N/A		1.55E+02		

Notes:

NA: Not available N/A: Not applicable Soil concentrations are presented on a dry weight basis.

***:** Calculated target level exceeds effective/saturated soil concentration for gasoline. Calculated value is shown.

#: Calculated target level exceeds effective/solubility for gasoline. Calculated value is shown.

+: Calculated target level exceeds effective/saturated vapor concentration for gasoline. Calculated value is shown.

Table 7-3
Tier 1 Risk-Based Target Levels for Construction Worker

Chemicals of Concern	Air	Soil		Groundwater			
	Outdoor	Ingestion, Inhalation (Vapor Emissions and Particulates), and Dermal Contact		Outdoor Inhalation of Vapor Emissions		Dermal Contact	
	[mg/m^3-air]	[mg/kg]		[mg/L]			
Benzene	1.51E-01	1.82E+03	*	1.16E+04	#	1.48E+01	
Toluene	2.45E+01	1.38E+05	*	1.77E+06	#	1.32E+02	#
Ethylbenzene	5.08E+00	5.81E+04	*	3.73E+05	#	9.76E+01	#
Xylenes (total)	5.08E-01	7.21E+03	*	4.10E+04	#	3.28E+02	#
Ethylene dibromide (EDB)	5.84E-03	7.74E+01		1.83E+03		3.58E+00	
Ethylene dichloride (EDC)	2.45E-02	3.51E+02		3.98E+03		8.95E+01	
Methyl tertiary butyl ether (MTBE)	1.35E+01	1.65E+05	*	2.95E+06	#	5.96E+03	
Acenaphthene	1.05E+00	2.57E+04	*	7.91E+05	#	2.08E+01	#
Anthracene	5.26E+00	1.35E+05	*	1.82E+06	#	4.89E+01	#
Benzo(a)anthracene	3.15E-02	1.19E+03	*	6.56E+05	#	4.42E-02	#
Benzo(a)pyrene	3.15E-03	1.19E+02	*	2.20E+05	#	2.59E-03	#
Benzo(b)fluoranthene	3.15E-02	1.14E+03	*	5.39E+04	#	2.55E-02	#
Benzo(k)fluoranthene	3.15E-02	1.19E+04	*	5.53E+06	#	2.64E-01	#
Chrysene	3.15E-01	6.57E+04	*	5.60E+05	#	4.42E+00	#
Dibenzo(a,h)anthracene	2.99E-03	1.19E+02	*	5.80E+06	#	1.67E-03	
Fluoranthene	7.01E-01	4.38E+04	*	5.32E+06	#	4.62E+00	#
Fluorene	7.01E-01	2.75E+04	*	1.23E+06	#	9.66E+00	#
Naphthalene	1.51E-02	2.15E+02	*	4.82E+03	#	5.21E+00	#
Pyrene	5.26E-01	3.37E+04	*	6.36E+06	#	2.52E+00	#
TPH-GRO	9.90E+01	1.29E+06	*	9.06E+04	#	NA	
TPH-DRO	1.22E+01	3.01E+06	*	2.42E+05	#	NA	

TPH-ORO	NA	2.89E+06	*	NA		NA	
Aliphatics - > C6-C8	9.29E+01	1.22E+06	*	4.76E+04	#	NA	
Aliphatics - > C8-C10	5.08E+00	5.81E+04	*	1.63E+03	#	NA	
Aliphatics - >C10-C12	5.08E+00	4.83E+04	*	1.09E+03	#	NA	
Aliphatics - >C12-C16	5.08E+00	4.83E+04	*	2.51E+02	#	NA	
Aliphatics - >C16-C21	NA	2.85E+06	*	NA		NA	
Aliphatics - >C21-C35	NA	2.85E+06	*	NA		NA	
Aromatics - >C8-C10	9.99E-01	1.27E+04	*	4.14E+04	#	NA	
Aromatics - >C10-C12	9.99E-01	1.15E+04	*	9.37E+04	#	NA	
Aromatics - >C12-C16	9.99E-01	1.15E+04	*	1.46E+05	#	NA	
Aromatics - >C16-C21	NA	3.72E+04	*	NA		NA	
Aromatics - >C21-C35	NA	3.72E+04	*	NA		NA	
Tertiary-amyl-methyl-ether (TAME)	4.03E-01	5.51E+03	*	5.49E+04	#	2.86E+02	
Tertiary-butyl-alcohol (TBA)	1.51E+00	2.00E+04	*	5.04E+06	#	2.35E+03	
Ethyl-tert-butyl-ether (ETBE)	1.51E+00	2.51E+03	*	2.35E+05	#	7.70E+00	
Diisopropyl ether (DIPE)	1.93E+00	2.52E+04	*	2.39E+05	#	5.36E+02	
Ethanol	9.46E+00	1.36E+05	*	4.46E+07	#	3.81E+06	#
Methanol	1.93E+01	2.32E+05	*	1.02E+08	#	1.02E+05	
Arsenic	1.51E-04	6.54E+02		N/A		2.58E+01	
Barium	2.45E-03	4.39E+05		N/A		1.72E+04	
Cadmium	1.95E-03	2.81E+03		N/A		8.60E+01	
Chromium (III) total chromium	5.08E-04	5.21E+05		N/A		1.29E+05	
Chromium (VI)	4.03E-05	4.30E+01		N/A		7.17E-01	
Lead	NA	NA		N/A		NA	
Selenium	9.99E-04	1.28E+04		N/A		4.30E+02	

Notes:

NA: Not available N/A: Not applicable Soil concentrations are presented on a dry weight basis.

***:** Calculated target level exceeds effective/saturated soil concentration for gasoline. Calculated value is shown.

#: Calculated target level exceeds effective/solubility for gasoline. Calculated value is shown.

+: Calculated target level exceeds effective/saturated vapor concentration for gasoline. Calculated value is shown.