Ministry for the
Environment
Manatū Mō Te Taiao

Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand

MODULE 4

Tier 1 soil acceptance criteria

August 1999

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Table 4.16 Route specific soil acceptance criteria through INHALATION pathway *Residential/agricultural use* (all values in mg/kg)

Soil Type/ Contaminant	Depth of Contamination [2]					
	Surface (<1 m)		1 m - 4 m		> 4 m	
	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor
SAND						
TPHs						
C_7-C_9	1,600	NA [1]	4,000	NA [1]	4,400	NA [1]
C_{10}-C_{14}	2,100	20,000	2,900	NA [1]	3,300	NA [1]
C_{15}-C_{36}	NA [1]	NA [1]	NA [1]	NA [1]	NA [1]	NA [1]
MAHs						
Benzene	1.1	160	2.4	180	2.6	200
Toluene	68	5,200	210	6,900	230	10,000
Ethylbenzene	53	1,400	100	2,300	120	4,300
Xylenes	48	4,300	160	5,600	180	8,100
PAHs						
Naphthalene	58	380	70	850	80	2,300
Non-carc. (Pyrene)	NA [1]	NA [1]	NA [1]	NA [1]	NA [1]	NA [1]
Benzo(a)pyrene eq.	NA [1]	530	NA [1]	NA [1]	NA [1]	NA [1]
SANDY SILT						
TPHs						
C_7-C_9	1,600	NA [1]	3,000	NA [1]	3,800	NA [1]
C_{10}-C_{14}	2,400	NA [1]	3,200	NA [1]	4,900	NA [1]
C_{15}-C_{36}	NA [1]	NA [1]	NA [1]	NA [1]	NA [1]	NA [1]
MAHs						
Benzene	1.1	170	1.9	200	2.4	270
Toluene	82	5,200	170	10,000	240	NA [1]
Ethylbenzene	59	2,100	92	4,500	140	NA [1]
Xylenes	59	4,300	130	8,100	180	NA [1]
PAHs						
Naphthalene	63	820	83	3,000	130	9,800
Non-carc. (Pyrene)	NA [1]	NA [1]	NA [1]	NA [1]	NA [1]	NA [1]
Benzo(a)pyrene eq.	NA [1]	290	NA [1]	NA [1]	NA [1]	NA [1]
SILTY CLAY						
TPHs						
C_7-C_9	2,700	NA [1]	7,300	NA [1]	19,000	NA [1]
C_{10}-C_{14}	3,200	NA [1]	NA [1]	NA [1]	NA [1]	NA [1]
C_{15}-C_{36}	NA [1]	NA [1]	NA [1]	NA [1]	NA [1]	NA [1]
MAHs						
Benzene	1.7	300	4.6	660	12	1,700
Toluene	210	NA [1]	950	NA [1]	3,000	NA [1]
Ethylbenzene	110	NA [1]	800	NA [1]	2,800	NA [1]
Xylenes	160	NA [1]	710	NA [1]	2,200	NA [1]
PAHs						
Naphthalene	69	3,400	330	NA [1]	1,100	NA [1]
Non-carc. (Pyrene)	NA [1]	NA [1]	NA [1]	NA [1]	NA [1]	NA [1]
Benzo(a)pyrene eq.	NA [1]	150	NA [1]	NA [1]	NA [1]	NA [1]

NOTE:

1. NA indicates contaminant not limiting as estimated health-based criterion is significantly higher than that likely to be encountered on site (i.e. 20,000 mg/kg for TPH, 10,000 mg/kg for other contaminants).
2. Assumes a 2 m thick layer of contaminated soil extending down from the depth indicated.