

Figure 1: Conceptual model for residential scenario with home-grown produce

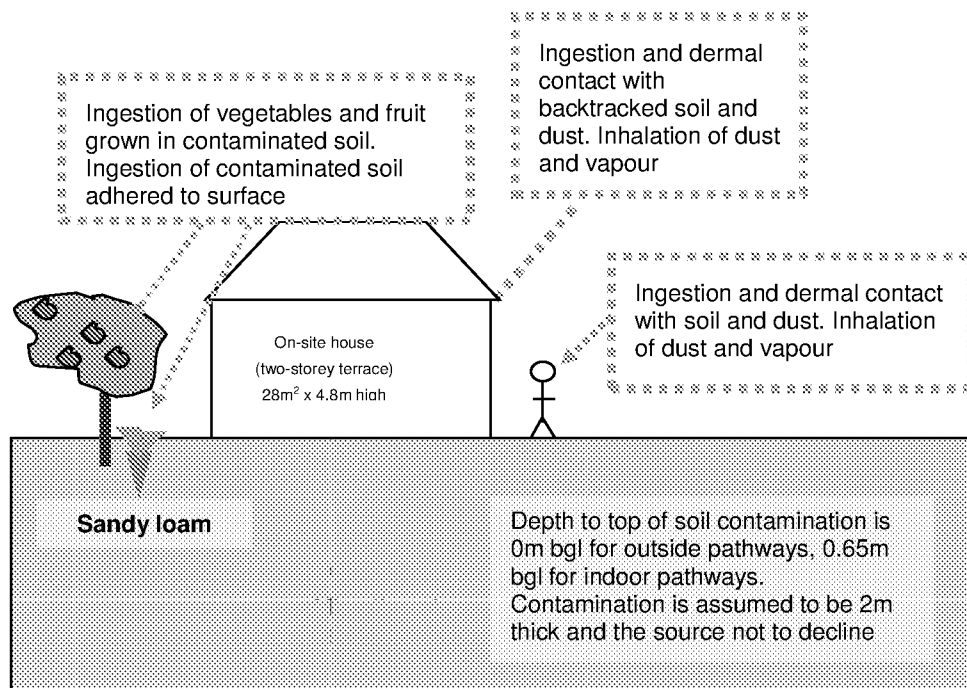


Table 1: Exposure assessment parameters for residential scenario with home-grown produce – inputs for CLEA model

Parameter	Value	Justification
Land use	Residential with homegrown produce	Chosen land use
Receptor	Female child age 1 to 6	Key generic assumption given in Box 3.1, SR3 ⁽⁵⁾
Building	Small terraced house	Key generic assumption given in Box 3.1, SR3. Small, two-storey terraced house chosen, as it is the most conservative residential building type in terms of protection from vapor intrusion (Section 3.4.6, SR3) ⁽⁵⁾
Soil type	Sandy Loam	Most common UK soil type (Section 4.3.1, from Table 3.1, SR3) ⁽⁵⁾
Start AC (age class)	1	Range of age classes corresponding to key generic assumption that the critical receptor is a young female child aged 0–6. From Box 3.1, SR3 ⁽⁵⁾
End AC (age class)	6	
SOM (%)	6	Representative of sandy loamy soil according to EA guidance note dated January 2009 entitled 'Changes We Have Made to the CLEA Framework Documents' ⁽¹³⁾
	1	To provide SAC for sites where SOM <6% as often observed by RSK
	2.5	
pH	7	Model default

Table 2: Residential with home-grown produce – modified home-grown produce data

Name	Consumption rate 90 th percentile (g FW kg ⁻¹ BW day ⁻¹) by age class						Dry weight conversion factor (g DW g ⁻¹ FW)	Home-grown fraction (average)	Home-grown fraction (high end)	Soil loading factor (g g ⁻¹ DW)	Preparation correction factor
	1	2	3	4	5	6					
Green vegetables	7.12	5.87	5.87	5.87	4.53	4.53	0.096	0.05	0.33	1.00E-03	2.00E-01
Root vegetables	10.7	2.83	2.83	2.83	2.14	2.14	0.103	0.06	0.4	1.00E-03	1.00E+00
Tuber vegetables	16	6.6	6.6	6.6	4.95	4.95	0.21	0.02	0.13	1.00E-03	1.00E+00
Herbaceous fruit	1.83	3.39	3.39	3.39	2.24	2.24	0.058	0.06	0.4	1.00E-03	6.00E-01
Shrub fruit	2.23	0.46	0.46	0.46	0.19	0.19	0.166	0.09	0.6	1.00E-03	6.00E-01
Tree fruit	3.82	10.3	10.3	10.3	5.16	5.16	0.157	0.04	0.27	1.00E-03	6.00E-01
Justification	Table 3.4, SP1010 ⁽³⁾						Table 6.3, SR3 ⁽⁵⁾	Table 4.19, SR3 ⁽⁵⁾		Table 6.3, SR3 ⁽⁵⁾	

Table 3: Residential with home-grown produce – modified use and receptor data

Parameter	Unit	Age class					
		1	2	3	4	5	6
EF (soil and dust ingestion)	day yr ⁻¹	180	365	365	365	365	365
EF (consumption of home-grown produce)	day yr ⁻¹	180	365	365	365	365	365
EF (skin contact, indoor)	day yr ⁻¹	180	365	365	365	365	365
EF (skin contact, outdoor)	day yr ⁻¹	170	170	170	170	170	170
EF (inhalation of dust and vapour, indoor)	day yr ⁻¹	365	365	365	365	365	365
EF (inhalation of dust and vapour, outdoor)	day yr ⁻¹	365	365	365	365	365	365
Justification		Table 3.5, SP1010 ⁽³⁾ ; Table 3.1, SR3 ⁽⁵⁾					
Soil to skin adherence factor (outdoor)	mg cm ⁻² day ⁻¹	0.1	0.1	0.1	0.1	0.1	0.1
Justification		Table 3.5, SP1010 ⁽³⁾					
Inhalation rate	m ³ day ⁻¹	5.4	8.0	8.9/f	10.1	10.1	10.1
Justification		Mean value USEPA, 2011 ⁽¹²⁾ ; Table 3.2, SP1010 ⁽³⁾					
Notes: For cadmium , the exposure assessment for a residential land use is based on estimates representative of lifetime exposure AC1-18. This is because the TDI _{oral} and TDI _{inh} are based on considerations of the kidney burden accumulated over 50 years. It is therefore reasonable to consider exposure not just in childhood but averaged over a longer period. See the Environment Agency Science Report SC05002/ TOX 3 ⁽¹⁾ , Science Report SC050021/Cadmium SGV ⁽¹⁾ and the project report SP1010 ⁽³⁾ for more information.							

References

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GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH - RESIDENTIAL WITH HOME-GROWN PRODUCE



Table 4

Human Health Generic Assessment Criteria by Pathway for Residential With Home-Grown Produce Scenario

Compound	Notes	SAC Appropriate to Pathway SOM 1% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 2.5% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 6% (mg/kg)			Soil Saturation Limit (mg/kg)
		Oral	Inhalation	Combined		Oral	Inhalation	Combined		Oral	Inhalation	Combined	
Metals													
Arsenic	(a,b)	3.71E+01	5.26E+02	NR	NR	3.71E+01	5.26E+02	NR	NR	3.71E+01	5.26E+02	NR	NR
Cadmium	(a)	2.30E+01	4.89E+02	2.21E+01	NR	2.30E+01	4.89E+02	2.21E+01	NR	2.30E+01	4.89E+02	2.21E+01	NR
Chromium (III) - trivalent	(c)	1.84E+04	8.07E+02	NR	NR	1.84E+04	8.07E+02	NR	NR	1.84E+04	8.07E+02	NR	NR
Chromium (VI) - hexavalent	(a,d)	5.85E+01	2.06E+01	NR	NR	5.85E+01	2.06E+01	NR	NR	5.85E+01	2.06E+01	NR	NR
Copper		2.72E+03	1.41E+04	2.37E+03	NR	2.72E+03	1.41E+04	2.37E+03	NR	2.72E+03	1.41E+04	2.37E+03	NR
Lead	(a)	2.01E+02	NR	NR	NR	2.01E+02	NR	NR	NR	2.01E+02	NR	NR	NR
Elemental Mercury (Hg ⁰)	(c)	NR	2.35E+01	NR	4.31E+00	NR	2.62E+01	NR	1.07E+01	NR	1.23E+00	NR	2.58E+01
Inorganic Mercury (Hg ²⁺)		3.95E+01	3.83E+03	3.91E+01	NR	3.95E+01	3.83E+03	3.91E+01	NR	3.95E+01	3.83E+03	3.91E+01	NR
Methyl Mercury (Hg ^{CH3})		1.26E+01	1.87E+01	7.82E+00	7.33E+01	1.26E+01	1.87E+01	9.84E+00	1.42E+02	1.26E+01	7.69E+01	1.09E+01	3.04E+02
Nickel	(d)	1.27E+02	1.81E+02	NR	NR	1.27E+02	1.81E+02	NR	NR	1.27E+02	1.81E+02	NR	NR
Selenium	(b)	2.59E+02	NR	NR	NR	2.59E+02	NR	NR	NR	2.59E+02	NR	NR	NR
Zinc	(b)	3.86E+03	3.83E+07	NR	NR	3.86E+03	3.83E+07	NR	NR	3.86E+03	3.83E+07	NR	NR
Cyanide (free)		1.37E+00	1.37E+04	1.37E+00	NR	1.37E+00	1.37E+04	1.37E+00	NR	1.37E+00	1.37E+04	1.37E+00	NR
Volatile Organic Compounds													
Benzene	(a)	2.62E+01	9.01E+01	2.09E+01	1.22E+03	5.39E+01	1.69E+02	1.09E+01	2.26E+03	1.15E+00	3.49E+02	6.73E+01	4.71E+03
Toluene		1.30E+02	9.08E+02	1.31E+02	8.69E+02	4.49E+02	2.00E+03	2.97E+02	1.92E+03	7.96E+02	4.55E+03	6.77E+02	4.36E+03
Ethylbenzene		1.10E+02	8.34E+01	4.74E+01	5.18E+02	2.81E+02	1.96E+02	1.12E+02	1.22E+03	6.00E+02	4.56E+02	2.65E+02	2.84E+03
Xylene - m		2.10E+02	8.25E+01	5.95E+01	6.25E+02	5.91E+02	1.95E+02	1.40E+02	1.47E+03	1.15E+03	4.50E+02	3.27E+02	3.46E+03
Xylene - o		1.92E+02	8.87E+01	6.97E+01	4.78E+02	4.56E+02	2.02E+02	1.43E+02	1.12E+03	1.05E+03	4.66E+02	3.32E+02	2.62E+03
Xylene - p		1.36E+02	7.98E+01	5.66E+01	5.76E+02	4.79E+02	1.65E+02	1.35E+02	1.35E+03	1.09E+03	4.36E+02	3.10E+02	3.17E+03
Total xylene		1.90E+02	7.93E+01	5.95E+01	6.25E+02	4.59E+02	1.89E+02	1.33E+02	1.47E+03	1.05E+03	4.39E+02	3.10E+02	3.46E+03
Methyl tertiary-Butyl ether (MTBE)		1.54E+02	1.04E+02	6.22E+01	2.04E+04	2.97E+02	1.69E+02	1.02E+02	3.31E+04	6.03E+02	3.21E+02	2.19E+02	6.27E+04
1,1,1,2-Tetrachloroethane		5.39E+02	1.34E+00	1.28E+00	2.60E+03	1.87E+01	3.96E+00	2.78E+00	6.02E+03	3.50E+01	9.29E+00	6.35E+00	1.40E+04
1,1,2,2-Tetrachloroethane		2.81E+00	3.52E+00	1.84E+00	2.67E+03	6.10E+00	8.64E+00	3.47E+00	5.46E+03	1.26E+01	7.76E+01	7.67E+00	1.20E+04
1,1,1-Trichloroethane		3.33E+02	9.01E+00	8.72E+00	1.43E+03	7.26E+02	1.84E+01	1.80E+01	2.92E+03	1.62E+03	4.04E+01	3.34E+01	6.39E+03
1,1,2-Trichloroethane		1.95E+02	1.25E+00	7.82E+01	4.03E+03	4.21E+00	2.95E+00	1.59E+00	8.21E+03	9.39E+00	5.99E+00	1.90E+00	1.80E+04
1,1-Dichloroethane		1.93E+01	3.29E+01	3.23E+01	2.23E+03	3.89E+01	3.62E+01	5.74E+01	3.94E+03	8.16E+01	1.17E+00	1.65E+00	7.94E+03
1,2-Dichloroethane		3.17E+02	9.80E+03	7.13E+03	3.41E+03	5.73E+02	1.31E+02	1.09E+02	4.91E+03	1.09E+01	2.28E+02	1.88E+02	8.43E+03
1,2,4-Trimethylbenzene		NR	1.76E+00	NR	4.74E+02	NR	4.25E+00	NR	1.16E+03	NR	9.72E+00	NR	2.76E+03
1,3,5-Trimethylbenzene	(e)	NR	NR	NR	2.30E+02	NR	NR	NR	5.52E+02	NR	NR	NR	1.30E+03
1,2-Dichloropropane		4.28E+02	3.40E+02	3.87E+02	1.19E+03	8.48E+02	6.00E+02	5.90E+02	2.11E+03	1.77E+01	1.21E+01	1.20E+01	4.24E+03
Carbon Tetrachloride (tetrachloromethane)		5.19E+00	2.59E+02	2.57E+02	1.52E+03	7.11E+00	2.65E+02	5.62E+02	3.32E+03	1.62E+01	1.29E+01	1.27E+01	7.54E+03
Chloroethane		NR	1.17E+01	NR	2.61E+03	NR	1.95E+01	NR	3.54E+03	NR	2.57E+01	NR	5.71E+03
Chloromethane		NR	1.17E+02	NR	1.91E+03	NR	1.88E+02	NR	2.24E+03	NR	1.89E+02	NR	2.99E+03
Cis 1,2-Dichloroethane		1.56E+01	NR	NR	3.94E+03	2.66E+01	NR	NR	6.61E+03	5.19E+01	NR	NR	1.29E+04
Dichloromethane		7.94E+01	3.95E+00	6.84E+01	7.27E+03	1.27E+00	4.95E+00	1.05E+00	9.68E+03	2.35E+00	6.42E+00	1.92E+00	1.53E+04
Tetrachloromethane		4.49E+00	1.79E+01	1.76E+01	4.24E+02	1.04E+01	1.02E+01	3.94E+01	9.51E+02	2.28E+01	9.21E+01	9.04E+01	2.18E+03
Trans 1,2-Dichloroethane		6.45E+00	2.19E+01	NR	3.42E+03	1.29E+01	4.99E+01	NR	6.17E+03	2.74E+01	1.82E+00	NR	1.26E+04
Trichloroethene		2.63E+01	1.72E+02	1.62E+02	1.54E+03	5.29E+01	3.59E+02	3.40E+02	3.22E+03	1.41E+00	7.99E+02	7.59E+02	7.14E+03
Vinyl Chloride (chloroethene)		3.82E+03	7.73E+04	6.43E+04	1.36E+03	6.87E+03	1.00E+03	6.73E+04	1.76E+03	1.25E+02	1.33E+03	1.36E+03	2.69E+03
Semi-Volatile Organic Compounds													
2-Chloronaphthalene		2.76E+02	5.29E+00	5.29E+00	1.14E+02	6.59E+02	1.33E+01	1.30E+01	2.80E+02	1.45E+03	3.17E+01	3.10E+01	6.69E+02
Acenaphthene		2.27E+02	4.86E+04	2.26E+02	5.70E+01	5.41E+02	1.15E+00	5.39E+02	1.41E+02	1.18E+03	2.69E+05	1.17E+03	3.36E+02
Acenaphthylene		1.85E+02	4.59E+04	1.84E+02	8.61E+01	4.42E+02	1.11E+00	4.40E+02	2.12E+02	9.79E+02	2.93E+05	9.74E+02	5.06E+02
Anthracene		2.43E+03	1.53E+05	2.39E+03	1.17E+00	5.53E+03	3.77E+05	5.45E+03	2.91E+00	1.10E+04	8.76E+05	1.09E+04	6.96E+00
Benzo(a)anthracene		1.01E+01	2.47E+01	7.18E+00	1.71E+00	1.42E+01	4.37E+01	1.07E+01	4.28E+00	1.69E+01	6.20E+01	1.33E+01	1.03E+01
Benzo(a)pyrene	(a)	4.96E+00	3.51E+01	NR	9.11E+01	4.96E+00	3.77E+01	NR	2.28E+00	4.96E+00	3.59E+01	NR	5.46E+00

GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH - RESIDENTIAL WITH HOME-GROWN PRODUCE



Table 4

Human Health Generic Assessment Criteria by Pathway for Residential With Home-Grown Produce Scenario

Compound	Notes	SAC Appropriate to Pathway SOM 1% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 2.5% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 6% (mg/kg)			Soil Saturation Limit (mg/kg)
		Oral	Inhalation	Combined		Oral	Inhalation	Combined		Oral	Inhalation	Combined	
Benzo(b)fluoranthene		2.36E+00	1.93E+01	2.56E+00	1.22E+00	3.89E+00	2.13E+01	3.29E+00	3.04E+00	4.43E+00	2.22E+01	3.89E+00	7.29E+00
Benzo(g,h,i)perylene		3.77E+02	1.87E+03	3.14E+02	1.54E+02	4.02E+02	1.94E+03	3.35E+02	3.85E+02	4.23E+02	1.97E+03	3.45E+02	9.23E+02
Benzo(k)fluoranthene		6.92E+01	5.41E+02	7.66E+01	6.87E+01	1.10E+02	5.76E+02	9.22E+01	1.72E+00	1.21E+02	6.91E+02	1.00E+02	4.12E+00
Chrysene		1.66E+01	1.19E+02	1.46E+01	4.40E+01	2.54E+01	1.49E+02	2.17E+01	1.10E+00	3.19E+01	1.69E+02	2.67E+01	2.64E+00
Dibenz(a,h)anthracene		2.90E+01	1.45E+00	2.41E+01	3.93E+03	3.43E+01	1.64E+00	2.64E+01	9.82E+03	3.69E+01	1.74E+00	3.04E+01	2.36E+02
Fluoranthene		2.67E+02	3.83E+04	2.85E+02	1.89E+01	5.63E+02	8.87E+04	5.60E+02	4.73E+01	9.00E+02	1.83E+05	8.96E+02	1.13E+02
Fluorene		1.77E+02	6.20E+03	1.72E+02	3.09E+01	4.19E+02	1.53E+04	4.07E+02	7.65E+01	8.98E+02	3.62E+04	8.77E+02	1.83E+02
Hexachlorocyclohexane		2.08E+01	NR	NR	8.17E+00	6.57E+01	NR	NR	2.01E+01	1.58E+00	NR	NR	4.81E+01
Indeno(1,2,3-cd)pyrene		3.09E+01	2.12E+02	2.70E+01	6.13E+02	4.22E+01	2.38E+02	3.59E+01	1.53E+01	4.82E+01	2.90E+02	4.11E+01	3.68E+01
Naphthalene		2.78E+01	2.33E+01	1.27E+01	7.64E+01	8.86E+01	5.98E+01	3.04E+01	1.83E+02	1.53E+02	1.31E+02	7.09E+01	4.32E+02
Phenanthrene		9.85E+01	7.17E+03	9.72E+01	3.60E+01	2.24E+02	1.76E+04	2.22E+02	8.96E+01	4.48E+02	4.07E+04	4.43E+02	2.14E+02
Pyrene		6.25E+02	8.79E+04	6.20E+02	2.20E+00	1.25E+03	2.04E+05	1.24E+03	5.49E+00	2.05E+03	4.23E+05	2.04E+03	1.32E+01
Phenol		1.80E+02	4.58E+02	1.20E+02	2.42E+04	2.96E+02	8.96E+02	2.09E+02	3.81E+04	5.66E+02	1.19E+05	3.89E+02	7.03E+04
Total Petroleum Hydrocarbons													
Aliphatic hydrocarbons <EC ₉ -EC ₉		4.99E+03	4.24E+01	4.23E+01	3.04E+02	1.13E+04	7.79E+01	7.78E+01	5.58E+02	2.50E+04	1.81E+02	1.80E+02	1.15E+03
Aliphatic hydrocarbons >EC ₉ -EC ₉		1.49E+04	1.04E+02	1.03E+02	1.44E+02	3.43E+04	2.31E+02	2.31E+02	3.22E+02	7.11E+04	5.29E+02	5.28E+02	7.36E+02
Aliphatic hydrocarbons >EC ₉ -EC ₁₀		1.61E+03	2.58E+01	3.67E+01	7.77E+01	2.91E+03	8.55E+01	8.51E+01	1.90E+02	4.26E+03	1.50E+02	1.54E+02	4.51E+02
Aliphatic hydrocarbons >EC ₁₀ -EC ₁₂		4.57E+03	1.33E+02	1.32E+02	4.75E+01	5.51E+03	3.31E+02	3.26E+02	1.18E+02	5.98E+03	7.93E+02	7.65E+02	2.83E+02
Aliphatic hydrocarbons >EC ₁₂ -EC ₁₆		6.27E+03	1.11E+03	1.06E+03	2.37E+01	6.34E+03	2.78E+03	2.41E+03	5.91E+01	6.36E+03	6.67E+03	4.34E+03	1.42E+02
Aliphatic hydrocarbons >EC ₁₆ -EC ₃₅	(b)	6.46E+04	NR	NR	8.48E+00	9.17E+04	NR	NR	2.12E+01	1.10E+05	NR	NR	5.09E+01
Aliphatic hydrocarbons >EC ₃₅ -EC ₄₄	(b)	6.46E+04	NR	NR	8.48E+00	9.17E+04	NR	NR	2.12E+01	1.10E+05	NR	NR	5.09E+01
Aromatic hydrocarbons >EC ₈ -EC ₁₀		5.78E+01	4.74E+01	3.45E+01	6.13E+02	1.38E+02	1.66E+02	8.38E+01	1.50E+03	3.87E+02	2.77E+02	1.94E+02	3.58E+02
Aromatic hydrocarbons >EC ₁₀ -EC ₁₂		6.29E+01	2.58E+02	7.52E+01	3.64E+02	1.96E+02	8.39E+02	1.79E+02	8.99E+02	4.25E+02	1.82E+03	3.81E+02	2.15E+03
Aromatic hydrocarbons >EC ₁₂ -EC ₁₆		1.47E+02	2.85E+03	1.45E+02	1.69E+02	3.38E+02	7.07E+03	3.32E+02	4.19E+02	5.81E+02	1.69E+04	5.74E+02	1.00E+03
Aromatic hydrocarbons >EC ₁₆ -EC ₂₁	(b)	2.60E+02	NR	NR	5.37E+01	5.45E+02	NR	NR	1.34E+02	9.34E+02	NR	NR	3.21E+02
Aromatic hydrocarbons >EC ₂₁ -EC ₃₅	(b)	1.09E+03	NR	NR	4.83E+00	1.47E+03	NR	NR	1.21E+01	1.70E+03	NR	NR	2.90E+01
Aromatic hydrocarbons >EC ₃₅ -EC ₄₄	(b)	1.09E+03	NR	NR	4.83E+00	1.47E+03	NR	NR	1.21E+01	1.70E+03	NR	NR	2.90E+01

Notes:

EC - equivalent carbon. SAC - soil assessment criteria.

The CLEA model output is colour coded depending upon whether the soil saturation limit has been exceeded.

	Calculated SAC exceeds soil saturation limit and may significantly affect the interpretation of any exceedances as the contribution of the indoor and outdoor vapour pathway to total exposure is >10%.
	Calculated SAC exceeds soil saturation limit but the exceedance will not affect the SAC significantly as the contribution of the indoor and outdoor vapour pathway to total exposure is <10%.
	Calculated SAC does not exceed the soil saturation limit.

The SAC for organic compounds are dependant upon soil organic matter (SOM) (%) content. To obtain SOM from total organic carbon (TOC) (%) divide by 0.5%. 1% SOM is 0.56% TOC. DL Rowell Soil Science: Methods and Applications, Longmans, 1994.

SAC for TPH fractions, PAHs naphthalene, acenaphthene and acenaphthylene, BTEX and trimethylbenzene compounds were produced using an attenuation factor for the indoor air inhalation pathway of 10 to reduce conservatism associated with the vapour inhalation pathway (Section 10.1.1, SR3).

(a) SAC for arsenic, benzene, benzo(a)pyrene, cadmium, chromium VI and lead are derived using the C4SL toxicology data.

(b) SAC for selenium should not include the inhalation pathway as no expert group HCV has been derived; aliphatic and aromatic hydrocarbons >EC16 should not include inhalation pathway due to their non-volatile nature and inhalation exposure being minimal (oral, dermal and inhalation exposure is compared to the oral HCV); arsenic should only be based on oral contribution (rather than combined) owing to the relative small contribution from inhalation in accordance with the SGV report. The Oral SAC should be adopted for zinc and benzo(a)pyrene.

(c) SAC for CrIII should be based on the lower of the oral and inhalation SAC (see LQM/CIEH 2015 Section 6.8)

(d) SAC for elemental mercury, chromium VI and nickel should be based on the inhalation pathway only.

(e) SAC for 1,3,5-trimethylbenzene is not recorded owing to the lack of toxicological data. SAC for 1,2,4-trimethylbenzene may be used.

GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH - RESIDENTIAL WITH HOME-GROWN PRODUCE



Table 5
Human Health Generic Assessment Criteria for Residential with home-grown produce

Compound	SAC for Soil SOM 1% (mg/kg)	SAC for Soil SOM 2.5% (mg/kg)	SAC for Soil SOM 6% (mg/kg)
Metals			
Arsenic	37	37	37
Cadmium	22	22	22
Chromium (III) - trivalent	910	910	910
Chromium (VI) - hexavalent	21	21	21
Copper	2,500	2,500	2,500
Lead	200	200	200
Elemental Mercury (Hg ⁰)	0.2	0.6	1.2
Inorganic Mercury (Hg ²⁺)	39	39	39
Methyl Mercury (Hg ⁺)	10	10	10
Nickel	130	130	130
Selenium	258	258	258
Zinc	3,900	3,900	3,900
Cyanide (free)	1.4	1.4	1.4
Volatile Organic Compounds			
Benzene	0.20	0.41	0.87
Toluene	130	300	680
Ethylbenzene	50	110	260
Xylene - m	59	140	327
Xylene - o	61	143	332
Xylene - p	57	133	310
Total xylene	57	133	310
Methyl tertiary-Butyl ether (MTBE)	60	110	210
1,1,1,2-Tetrachloroethane	1.20	2.78	6.46
1,1,2,2-Tetrachloroethane	1.6	3.5	7.7
1,1,1-Trichloroethane	9	18	39
1,1,2-Trichloroethane	0.8	1.6	3.5
1,1-Dichloroethane	0.32	0.57	1.16
1,2-Dichloroethane	0.007	0.011	0.019
1,2,4-Trimethylbenzene	1.8	4.3	9.7
1,3,5-Trimethylbenzene	NR	NR	NR
1,2-Dichloropropane	0.034	0.060	0.120
Carbon Tetrachloride (tetrachloromethane)	0.026	0.056	0.127
Chloroethane	11.7	15.9	25.7
Chloromethane	0.012	0.014	0.019
Cis 1,2-Dichloromethane	0.16	0.27	0.52
Dichloromethane	0.62	1.08	1.92
Tetrachloroethane	0.2	0.4	0.9
Trans 1,2-Dichloroethane	0.28	0.50	1.02
Trichloroethene	0.02	0.03	0.08
Vinyl Chloride (chloromethane)	0.0006	0.0009	0.0014
Semi-Volatile Organic Compounds			
2-Chloronaphthalene	5	13	31
Acenaphthene	230	540	1,170
Acenaphthylene	180	440	970
Anthracene	2,400	5,500	10,900
Benzo(a)anthracene	7	11	13
Benzo(a)pyrene	5	5	5
Benzo(b)fluoranthene	2.6	3.3	3.7
Benzo(g,h,i)perylene	310	340	350
Benzo(k)fluoranthene	77	92	100
Chrysene	15	22	27
Dibenzo(a,h)anthracene	0.24	0.28	0.30
Fluoranthene	290	560	900
Fluorene	170	410	880
Hexachloroethane	0.27	0.66	1.55
Indeno(1,2,3-cd)pyrene	27	36	41
Naphthalene	13	30	71
Phenanthrene	100	220	440
Pyrene	620	1,240	2,040
Phenol	120	210	390
Total Petroleum Hydrocarbons			
Aliphatic hydrocarbons EC ₉ -EC ₆	42	78	160
Aliphatic hydrocarbons >EC ₆ -EC ₈	100	230	530
Aliphatic hydrocarbons >EC ₈ -EC ₁₀	27	65	154
Aliphatic hydrocarbons >EC ₁₀ -EC ₁₂	130 (48)	330 (118)	760 (283)
Aliphatic hydrocarbons >EC ₁₂ -EC ₁₆	1,100 (24)	2,400 (59)	4,300 (142)
Aliphatic hydrocarbons >EC ₁₆ -EC ₃₅	65,000 (8)	92,000 (21)	110,000
Aliphatic hydrocarbons >EC ₃₅ -EC ₄₄	65,000 (8)	92,000 (21)	110,000
Aromatic hydrocarbons >EC ₉ -EC ₁₀	30	80	190
Aromatic hydrocarbons >EC ₁₀ -EC ₁₂	80	180	390
Aromatic hydrocarbons >EC ₁₂ -EC ₁₆	140	330	670
Aromatic hydrocarbons >EC ₁₆ -EC ₂₁	260	540	930
Aromatic hydrocarbons >EC ₂₁ -EC ₃₅	1,100	1,500	1,700
Aromatic hydrocarbons >EC ₃₅ -EC ₄₄	1,100	1,500	1,700
Minerals			
Asbestos	No asbestos detected with ID or <0.001% dry weight ¹		
Notes:			
¹ Generic assessment criteria not calculated owing to low volatility of substance and therefore no pathway, or an absence of toxicological data.			
NR - SAC for 1,3,5-trimethylbenzene is not recorded owing to the lack of toxicological data. SAC for 1,2,4-trimethylbenzene may be used			
EC - equivalent carbon. SAC - soil assessment criteria.			
¹ LOD for weight of asbestos per unit weight of soil calculated on a dry weight basis using PLM, handpicking and gravimetry.			
The SAC for organic compounds are dependent on Soil Organic Matter (SOM) (%) content. To obtain SOM from total organic carbon (TOC) (%) divide by 0.58. 1% SOM is 0.58% TOC. DL Rowell Soil Science: Methods and Applications, Longmans, 1994.			
SAC for TPH fractions, PAHs naphthalene, acenaphthene and acenaphthylene, BTEX and trimethylbenzene compounds were produced using an attenuation factor for the indoor air inhalation pathway of 10 to reduce conservatism associated with the vapour inhalation pathway, section 10.1.1, SR3.			
(VALUE IN BRACKETS)			
RSK has adopted an approach for petroleum hydrocarbons in accordance with LQM/CIEH whereby the concentration modelled for each petroleum hydrocarbon fraction has been tabulated as the SAC with the corresponding solubility or vapour saturation limits given in brackets.			

APPENDIX J

GENERIC ASSESSMENT CRITERIA FOR PHYTOTOXIC EFFECTS



Several compounds can inhibit plant growth; hence it is important to have generic assessment criteria (GAC) to promote healthy plant growth. In the absence of other published GAC, the GAC have been obtained from legislation (UK and European) and guidance related to the use of sewage sludge on agricultural fields.

The Council of European Communities Sewage Sludge Directive (86/278/EEC) dated 1986, has been transposed into UK law by Statutory Instrument No. 1263, The Sludge (use in Agriculture) Regulations 1989 (Public Health England, Wales and Scotland), as amended in 1990 and The Sludge (use in Agriculture) Regulations (Northern Ireland) SR No, 245, 1990. In addition the Department of Environment (DoE) produced a Code of Practice (CoP) (Updated 2nd Edition) in 2006 which provided guidance on the application of sewage sludge on agricultural land (however the status of this document is unclear as it is on the archive section of the Defra website).

The directive seeks to encourage the use of sewage sludge in agriculture and to regulate its use in such a way as to “**prevent harmful effects on soil, vegetation, animals and man**”. To this end, it prohibits the use of untreated sludge on agricultural land unless it is injected or incorporated into the soil. Treated sludge is defined as having undergone “biological, chemical or heat treatment, long-term storage or any other appropriate process so as significantly to reduce its fermentability and the health hazards resulting from its use”. To provide protection against potential health risks from residual pathogens, sludge must not be applied to soil in which fruit and vegetable crops are growing, or less than ten months before fruit and vegetable crops are to be harvested. Grazing animals must not be allowed access to grassland or forage land less than three weeks after the application of sludge.

The specified limits of concentrations of selected elements in soil are presented in Table 4 of the updated 2nd Edition of the DoE Code of Practice and are designed to protect plant growth. It is noted that these values are more stringent than the values set in current UK regulations. However since they were amended following recommendations from the Independent Scientific Committee in 1993. (MAFF/DOE 1993). The GAC are presented in Table 1.

Table 1: Generic assessment criteria

Determinant	Generic assessment criteria (mg/kg)			
	pH 5.0 < 5.5	pH 5.5 < 6.0	pH 6.0 < 7.0	pH >7.0
Zinc	200	200	200	300
Copper	80	100	135	200
Nickel	50	60	75	110
Lead	300	300	300	300
Cadmium	3	3	3	3
Mercury	1	1	1	1
Note: Only compounds with assessment criteria documented within the Directive 86/278/EEC have been included, although criteria for 5 additional compounds have been presented within the 2006 CoP.				

APPENDIX K

GENERIC ASSESSMENT CRITERIA FOR POTABLE WATER SUPPLY PIPES

A range of pipe materials is available and careful selection, design and installation is required to ensure that water supply pipes are satisfactorily installed and meet the requirements of the Water Supply (Water Fittings) Regulations 1999 in England and Wales, the Byelaws 2000 in Scotland and the Northern Ireland Water Regulations. The regulations include a requirement to use only suitable materials when laying water pipes and laying water pipes without protection is not permitted at contaminated sites. The water supply company has a statutory duty to enforce the regulations.

Contaminants in the ground can pose a risk to human health by permeating potable water supply pipes. To fulfil their statutory obligation, UK water supply companies require robust evidence from developers to demonstrate either that the ground in which new plastic supply pipes will be laid is free from specific contaminants, or that the proposed remedial strategy will mitigate any existing risk. If these requirements cannot be demonstrated to the satisfaction of the relevant water company, it becomes necessary to specify an alternative pipe material on the whole development or in specific zones.

In 2010, UK Water Industry Research (UKWIR) published *Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites* (Report Ref. No. 10/WM/03/21). This report reviewed previously published industry guidelines and threshold concentrations adopted by individual water supply companies.

The focus of the UKWIR research project was to develop clear and concise procedures, which provide consistency in the pipe selection decision process. It was intended to provide guidance that can be used to ensure compliance with current regulations and to prevent water supply pipe failing prematurely due to the presence of contamination.

The report concluded that in most circumstances only organic contaminants pose a potential risk to plastic pipe materials and Table 3.1 of the report provides threshold concentrations for polyethylene (PE) and polyvinyl chloride (PVC) pipes for the organic contaminants of concern. The report also makes recommendations for the procedures to be adopted in the design of site investigations and sampling strategies, and the assessment of data, to ensure that the ground through which water supply pipes will be laid is adequately characterised.

Risks to water supply pipes have therefore been assessed against the threshold concentrations for PE and PVC pipe specified in Table 3.1 of Report 10/WM/03/21, which have been adopted as the GAC for this linkage and are reproduced in Table A3 below.

Since water supply pipes are typically laid at a minimum depth of 0.75 m below finished ground levels, sample results from depths between 0.5 m and 1.5 m below finished level are generally considered suitable for assessing risks to water supply. Samples outside these depths can be used, providing the stratum is the same as that in which water supply pipes are likely to be located. The report specifies that sampling should characterise the ground conditions to a minimum of 0.5 m below the proposed depth of the pipe.

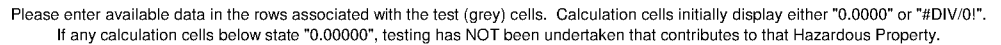
It should be noted that the assessment provided in this report is a guide and the method of assessment and recommendations should be checked with the relevant water supply company.

Table Q1: Generic assessment criteria for water supply pipes

		Pipe material	
		GAC (mg/kg)	
	Parameter group	PE	PVC
1	Extended VOC suite by purge and trap or head space and GC-MS with TIC (Not including compounds within group 1a)	0.5	0.125
1a	BTEX + MTBE	0.1	0.03
2	SVOCs TIC by purge and trap or head space and GC-MS with TIC (aliphatic and aromatic C ₅ –C ₁₀) (Not including compounds within group 2e and 2f)	2	1.4
2e	Phenols	2	0.4
2f	Cresols and chlorinated phenols	2	0.04
3	Mineral oil C ₁₁ –C ₂₀	10	Suitable
4	Mineral oil C ₂₁ –C ₄₀	500	Suitable
5	Corrosive (conductivity, redox and pH)	Suitable	Suitable
Specific suite identified as relevant following site investigation			
2a	Ethers	0.5	1
2b	Nitrobenzene	0.5	0.4
2c	Ketones	0.5	0.02
2d	Aldehydes	0.5	0.02
6	Amines	Not suitable	Suitable
Notes: where indicated as 'suitable' the material is considered resistant to permeation or degradation and no threshold concentration has been specified by UKWIP.			

APPENDIX L

WM3 ASSESSMENT



Site Code and Name

WS1	WS3	WS4	WS7	WS10	WS9	WS9	WS11	WS12
0.10	0.20	0.20	0.10	0.40	0.00	0.10	0.00	0.00
0.20	0.30	0.30	0.20	0.50	0.10	0.50	0.50	0.70

% Moisture	%				9.3					
pH (soil)		8.01	8.82	7.94	9.04	8.27	8.2	8	8.39	8.22
pH (leachate)										
Arsenic	mg/kg	59	1	3	1	1	2	3	3	5
Cadmium	mg/kg	2.6	0.5	1.2	1.1	0.9	1.7	1.2	0.5	0.8
Copper	mg/kg	166	5	38	16	9	15	14	15	25
Cr(VI) or Chromium	mg/kg	67	6	32	24	24	24	32	13	27
Lead	mg/kg	1520	27	59	86	10	80	23	44	86
Mercury	mg/kg	0.45	0.17	0.52	0.61	0.17	1.6	0.17	1.52	1.19
Nickel	mg/kg	44	4	16	14	14	26	19	9	22
Selenium	mg/kg	2	1	3	2	2	1	1	1	2
Zinc	mg/kg	1010	25	128	102	45	64	47	52	109

Barium	mg/kg								
Beryllium	mg/kg								
Vanadium	mg/kg								
Cobalt	mg/kg								
Manganese	mg/kg								
Molybdenum	mg/kg								
Antimony	mg/kg								
Aluminum	mg/kg								
Bismuth	mg/kg								
Cadmium	mg/kg								
Iron	mg/kg								
Strontium	mg/kg								
Tellurium	mg/kg								
Thallium	mg/kg								
Titanium	mg/kg								
Tungsten	mg/kg								
Ammoniacal N vs Boron	mg/kg								

[illegible]

TPH									
Petrol	mg/kg								
Diesel	mg/kg								
Lube Oil	mg/kg								
Crude Oil									
White Spirit / Kerosene	mg/kg								
Creosote	mg/kg								
Unknown TPH with ID									
Unknown TPHCWG	mg/kg	944	433	28	3.0	239	7	1310	32
Total Sulphide	mg/kg								
Complex Cyanide	mg/kg								
Free (or Total) Cyanide	mg/kg								
Thiocyanate	mg/kg								
Elemental/Free Sulphur	mg/kg								

Phenols Input Total Phenols HPLC OR individual Phenol results.						
Phenol	mgs/g					
Cresols	mgs/g					
Xylenols	mgs/g					
Bisphenol A	mgs/g					
Phenols Total by HPLC	mgs/g					

[illegible]

PCBs (POPs)									
PCBs Total (eq EC7/WHO12)	mg/kg								

[illegible]



Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name

TP/WS/BH

Depth (m)

Envirolab reference

WS1	WS3	WS4	WS7	WS10	WS9	WS9	WS11	WS12
0.10	0.20	0.20	0.10	0.40	0.00	0.10	0.00	0.00
0.20	0.30	0.30	0.20	0.50	0.10	0.50	0.50	0.70

POPs Dioxins and Furans Input Total Dioxins and Furans
OR Individual Dioxin and Furan results.

2,3,7,8-TeCDD	mg/kg								
1,2,3,7,8-PeCDD	mg/kg								
1,2,3,4,7,8-HxCDD	mg/kg								
1,2,3,6,7,8-HxCDD	mg/kg								
1,2,3,7,8,9-HxCDD	mg/kg								
1,2,3,4,6,7,8-HpCDD	mg/kg								
OCDD	mg/kg								
2,3,7,8-TeCDF	mg/kg								
1,2,3,7,8-PeCDF	mg/kg								
2,3,4,7,8-PeCDF	mg/kg								
1,2,3,4,7,8-HxCDF	mg/kg								
1,2,3,6,7,8-HxCDF	mg/kg								
2,3,4,6,7,8-HxCDF	mg/kg								
1,2,3,7,8,9-HxCDF	mg/kg								
1,2,3,4,6,7,8-HpCDF	mg/kg								
1,2,3,4,7,8,9-HpCDF	mg/kg								
OCDF	mg/kg								
Total Dioxins and Furans	mg/kg								

Some Pesticides (POPs unless otherwise stated)

Aldrin	mg/kg								
α-Hexachlorocyclohexane (alpha-HCH) (leave empty if total HCH results used)	mg/kg								
β-Hexachlorocyclohexane (beta-HCH) (leave empty if total HCH results used)	mg/kg								
α-Cis-Chlordane (alpha) OR Total Chlordane	mg/kg								
δ-Hexachlorocyclohexane (delta-HCH) (leave empty if total HCH results used)	mg/kg								
Dieldrin	mg/kg								
Endrin	mg/kg								
γ-Hexachlorocyclohexane (gamma-HCH) (lindane) OR Total HCH	mg/kg								
Heptachlor	mg/kg								
Hexachlorobenzene	mg/kg								
o,p'-DDT (leave empty if total DDT results used)	mg/kg								
p,p'-DDT OR Total DDT	mg/kg								
γ-Trans-Chlordane (gamma) (leave empty if total Chlordane results used)	mg/kg								
Chlordecone (kepone)	mg/kg								
Pentachlorobenzene	mg/kg								
Mirex	mg/kg								
Toxaphene (camphchlor)	mg/kg								

Tin

Tin (leave empty if Organotin and Tin excl Organotin results used)	mg/kg								
--	-------	--	--	--	--	--	--	--	--

Organotin

Dibutyltin, DiBT	mg/kg								
Tributyltin, TriBT	mg/kg								
Triphenyltin, TriPT	mg/kg								
Tetrabutyltin, TeBT	mg/kg								

Tin excluding Organotin

Tin excl Organotin	mg/kg								
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Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name

TP/WS/BH
Depth (m)
Envirolab reference

WS1	WS3	WS4	WS7	WS10	WS9	WS9	WS11	WS12
0.10	0.20	0.20	0.10	0.40	0.00	0.10	0.00	0.00
0.20	0.30	0.30	0.20	0.50	0.10	0.50	0.50	0.70

Asbestos in Soil	Thresholds
Asbestos detected in Soil (enter Y or N)	N

--	--	--	--	--	--	--	--	--

Asbestos % Composition in Soil (Matrix Loose Fibres or Microscopic Identifiable Pieces only)	see "Care HP7 % Asbestos in Soil (Fibres)" below
Carcinogenic HP7 % Asbestos in Soil (fibres or micro pieces)	0.01%
Please be advised, if the calculation cell is "0.00000" DOES NOT MEAN asbestos testing has been undertaken and the result is zero.	

If Asbestos in Soil above is "Y", the soil is Hazardous Waste HP5 and HP7

0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

If Asbestos in Soil above is "Y", but Asbestos % above is "<0.1%", the soil is Non-Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use Asbestos % results when visual identifiable pieces are present.

Asbestos Identifiable Pieces visible with the naked eye detected in the Soil (enter Y or N)	N
---	---

--	--	--	--	--	--	--	--	--

If visual identifiable pieces of asbestos are present, you cannot use Asbestos % results and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 17 06 05. Therefore, if Asbestos in Soil above is "Y", the Asbestos % above is "<0.1%", but the Asbestos Identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.

Identifiable Pieces are Cement, Fragments, Board, Rope etc. ie anything ACM that is not Loose Fibres.

All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.

Hazardous Property	Thresholds	Cut Off Value
--------------------	------------	---------------

Corrosive HP8	25%	<1%
Irritant HP4	25%	<1%
Irritant HP4	25%	<1%
Specific Target Organ Toxicity HP5	25%	
Specific Target Organ Toxicity HP5	25%	
Specific Target Organ Toxicity HP5	25%	
Specific Target Organ Toxicity HP5	25%	
Aspiration Toxicity HP5	25%	
Acute Toxicity HP6 (Oral)	25.5%	<0.1%
Acute Toxicity HP6 (Oral)	25.5%	<0.1%
Acute Toxicity HP6 (Oral)	25%	<0.1%
Acute Toxicity HP6 (Oral)	25.5%	<0.1%
Acute Toxicity HP6 (Dermal)	25.5%	<0.1%
Acute Toxicity HP6 (Dermal)	25.5%	<0.1%
Acute Toxicity HP6 (Dermal)	25.5%	<0.1%
Acute Toxicity HP6 (Dermal)	25.5%	<0.1%
Acute Toxicity HP6 (Inhal)	25.5%	<0.1%
Acute Toxicity HP6 (Inhal)	25.5%	<0.1%
Acute Toxicity HP6 (Inhal)	25.5%	<0.1%
Carcinogenic HP7	25.5%	
Carcinogenic HP7	25.5%	
Carcinogenic HP7	25%	
Carcinogenic HP7 Unknown TPH with ID	25.000000000	
Carcinogenic HP7 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	25.01%	
pH Corrosive HP8 pH (soil or leachate)	12.5	
pH Corrosive HP8 pH (soil or leachate)	12.5	
Toxic for Reproduction HP10	25.5%	
Toxic for Reproduction HP10	25%	
Mutagenic HP11	25.1%	
Mutagenic HP11 Unknown TPH with ID	25.000000000	
Mutagenic HP11 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	25.01%	
Mutagenic HP11	25%	
Produces Toxic Gases HP12 Sulphide	25.000000000	
Produces Toxic Gases HP12 Cyanide	25.000000000	
Produces Toxic Gases HP12 Thiocyanate	25.000000000	
HP13 Sensitising	25%	

If cells below turn yellow and the text turns red, the samples should be classified as Hazardous Waste.

0.02065	0.00128	0.00654	0.00430	0.00474	0.00487	0.00654	0.00289	0.00584
0.02655	0.00070	0.00469	0.00176	0.00115	0.00196	0.00198	0.00209	0.00349
0.02793	0.00213	0.00755	0.00624	0.00386	0.00725	0.00544	0.00506	0.00729
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00006	0.00010	0.00001	0.00023	0.00000	0.00006	0.00000	0.00037	0.00000
0.01286	0.00115	0.00614	0.00418	0.00461	0.00525	0.00614	0.00250	0.00518
0.15200	0.04330	0.00590	0.00780	0.00100	0.02390	0.00230	0.13100	0.00860
0.09440	0.04330	0.00280	0.00000	0.00030	0.02390	0.00070	0.13100	0.00320
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00783	0.00015	0.00045	0.00018	0.00015	0.00044	0.00041	0.00055	0.00078
0.01315	0.00129	0.00657	0.00444	0.00489	0.00475	0.00629	0.00264	0.00547
0.18017	0.00482	0.01356	0.01368	0.00485	0.01540	0.00786	0.00938	0.01597
0.00005	0.00002	0.00005	0.00006	0.00002	0.00018	0.00002	0.00015	0.00012
0.01286	0.00115	0.00614	0.00418	0.00461	0.00525	0.00614	0.00250	0.00518
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00026	0.00005	0.00012	0.00010	0.00009	0.00017	0.00012	0.00005	0.00008
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.01317	0.00122	0.00632	0.00433	0.00472	0.00496	0.00628	0.00270	0.00538
0.00028	0.00014	0.00042	0.00026	0.00028	0.00014	0.00014	0.00014	0.00028
0.17965	0.00408	0.01343	0.01201	0.00485	0.01495	0.00772	0.00792	0.01587
0.15320	0.04330	0.00614	0.00780	0.00461	0.02390	0.00614	0.13100	0.00860
0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
0.00032	0.00051	0.00001	0.00122	0.00001	0.00010	0.00001	0.00057	0.00001
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
8.01	8.82	7.94	9.04	8.27	8.20	8.00	8.39	8.22
8.01	8.82	7.94	9.04	8.27	8.20	8.00	8.39	8.22
0.15200	0.00270	0.00590	0.00780	0.00283	0.00800	0.00384	0.00440	0.00860
0.09440	0.04330	0.00614	0.00418	0.00461	0.02390	0.00614	0.13100	0.00518
0.09440	0.04330	0.00614	0.00418	0.00461	0.02390	0.00614	0.13100	0.00518
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
0.00889	0.00081	0.00323	0.00256	0.00283	0.00525	0.00384	0.00182	0.00444
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.01286	0.00115	0.00614	0.00418	0.00461	0.00525	0.00614	0.00250	0.00518



Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name

TP/WS/BH

Depth (m)

Envirolab reference

WS1

WS3

WS4

WS7

WS10

WS9

WS9

WS11

WS12

0.10

0.20

0.20

0.10

0.40

0.00

0.10

0.00

0.00

0.20

0.30

0.30

0.20

0.50

0.10

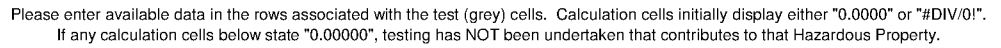
0.50

0.50

0.70

Ecotoxic HP14 amended v8	25%	<0.1%	0.32879	0.01250	0.03663	0.03783	0.01566	0.02955	0.02049	0.02364	0.03591
Ecotoxic HP14 amended v8	25%	<0.1% / 1.0%	0.42320	0.05580	0.03943	0.03783	0.01596	0.05345	0.02119	0.15464	0.03911
Ecotoxic HP14 amended v8	25%	<0.1% / 1.0%	15.22146	1.68300	3.69100	3.78301	1.56890	3.19380	2.05590	3.67360	3.62260
Persistent Organic Pollutant (PCB, PBB or POP Pesticides)	<0.0001%		0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Persistent Organic Pollutant (Total Dioxins+Furans)	<0.000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000
Persistent Organic Pollutant (Individual Dioxins+Furans)	<0.000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000

If other contaminants need adding to Haswaste, please contact Envirolab.



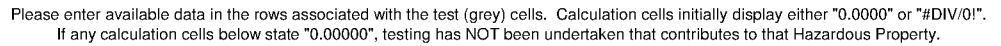
Site Code and Name

TP2	TP6	TP14	TP24	TP05	TP07	TP08	TP09	TP11
-----	-----	------	------	------	------	------	------	------

0.20	0.20	0.10	0.30	0.10	0.20	0.20	0.20	0.20
0.30	0.30	0.20	0.40	0.20	0.30	0.30	0.30	0.30

Barium	mg/kg								
Beryllium	mg/kg								
Vanadium	mg/kg								
Cobalt	mg/kg								
Manganese	mg/kg								
Molybdenum	mg/kg								
Antimony	mg/kg								
Aluminum	mg/kg								
Bismuth	mg/kg								
Cdli	mg/kg								
Iron	mg/kg								
Strontium	mg/kg								
Tellurium	mg/kg								
Thallium	mg/kg								
Titanium	mg/kg								
Tungsten	mg/kg								
Ammoniacal N ws Boron	mg/kg								

[illegible][illegible][illegible]



TP11

ARUN DISTRICT COUNCIL A/270/21/OUT



Haswaste, developed by Dr. Iain Haslock.

Site Code and Name

TP/WS/BH
Depth (m)
Envirolab reference

Asbestos in Soil	Thresholds
Asbestos detected in Soil (enter Y or N)	N

Asbestos % Composition in Soil (Matrix Loose Fibres or Microscopic Identifiable Pieces only)	see "Care HP7 % Asbestos in Soil (Fibres)" below
Carcinogenic HP7 % Asbestos in Soil (fibres or micro pieces)	<0.1%
<i>Please be advised, if the calculation cell is "0.0000" DOES NOT MEAN asbestos testing has been undertaken and the result is zero.</i>	

Asbestos Identifiable Pieces visible with the naked eye detected in the Soil (enter Y or N)	N
---	---

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

TP2	TP6	TP14	TP24	TP05	TP07	TP08	TP09	TP11
0.20	0.20	0.10	0.30	0.10	0.20	0.20	0.20	0.20
0.30	0.30	0.20	0.40	0.20	0.30	0.30	0.30	0.30

--	--	--	--	--	--	--	--	--

If Asbestos in Soil above is "Y", the soil is Hazardous Waste HP5 and HP7

0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

If Asbestos in Soil above is "Y", but Asbestos % above is "<0.1%", the soil is Non-Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use Asbestos % results when visual identifiable pieces are present.

--	--	--	--	--	--	--	--	--

If visual identifiable pieces of asbestos are present, you cannot use Asbestos % results and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 17 06 05. Therefore, if Asbestos in Soil above is "Y", the Asbestos % above is "<0.1%", but the Asbestos Identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.

Identifiable Pieces are Cement, Fragments, Board, Rope etc. ie anything ACM that is not Loose Fibres.

All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.

Hazardous Property	Thresholds	Cut Off Value
Corrosive HP8	>0.5%	<1%
Irritant HP4	>1.0%	<1%
Irritant HP4	>0.5%	<1%
Specific Target Organ Toxicity HP5	>1%	
Specific Target Organ Toxicity HP5	>0.5%	
Specific Target Organ Toxicity HP5	>1%	
Specific Target Organ Toxicity HP5	>1.5%	
Aspiration Toxicity HP5	>1.5%	
Acute Toxicity HP6 (Oral)	>0.1%	<0.1%
Acute Toxicity HP6 (Oral)	>0.25%	<0.1%
Acute Toxicity HP6 (Oral)	>5%	<0.1%
Acute Toxicity HP6 (Oral)	>0.5%	<1%
Acute Toxicity HP6 (Oral)	>0.25%	<0.1%
Acute Toxicity HP6 (Dermal)	>0.25%	<0.1%
Acute Toxicity HP6 (Dermal)	>0.5%	<0.1%
Acute Toxicity HP6 (Dermal)	>1.5%	<0.1%
Acute Toxicity HP6 (Dermal)	>0.5%	<1%
Acute Toxicity HP6 (Dermal)	>0.1%	<0.1%
Acute Toxicity HP6 (Inhal)	>0.1%	<0.1%
Acute Toxicity HP6 (Inhal)	>0.5%	<0.1%
Acute Toxicity HP6 (Inhal)	>0.5%	<0.1%
Acute Toxicity HP6 (Inhal)	>0.25%	<1%
Carcinogenic HP7	>0.1%	
Carcinogenic HP7	>0.1%	
Carcinogenic HP7	>1%	
Carcinogenic HP7 Unknown TPH with ID	>1,000mg/kg	
Carcinogenic HP7 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	>0.01%	
pH Corrosive HP8 pH (soil or leachate)	>11.5	
pH Corrosive HP8 pH (soil or leachate)	>11.5	
Toxic for Reproduction HP10	>0.5%	
Toxic for Reproduction HP10	>5%	
Mutagenic HP11	>0.1%	
Mutagenic HP11 Unknown TPH with ID	>1,000mg/kg	
Mutagenic HP11 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	>0.01%	
Mutagenic HP11	>1%	
Produces Toxic Gases HP12 Sulphide	>1,000mg/kg	
Produces Toxic Gases HP12 Cyanide	>1,000mg/kg	
Produces Toxic Gases HP12 Thiocyanate	>2,000mg/kg	
HP13 Sensitising	>1%	

If cells below turn yellow and the text turns red, the samples should be classified as Hazardous Waste.

0.00733	0.00739	0.00475	0.00489	0.00449	0.00474	0.00481	0.00424	0.00400
0.00714	0.00332	0.00268	0.00138	0.00219	0.00228	0.00277	0.00187	0.00199
0.01416	0.00713	0.00479	0.00379	0.00416	0.00479	0.00502	0.00391	0.00358
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.01030	0.00634	0.00422	0.00453	0.00422	0.00461	0.00442	0.00384	0.00341
0.00110	0.00120	0.00190	0.00109	0.00720	0.00210	0.00260	0.00170	0.00160
0.00000	0.00000	0.00000	0.00000	0.00070	0.00000	0.00250	0.00000	0.00000
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00332	0.00107	0.00055	0.00037	0.00028	0.00015	0.00041	0.00043	0.00060
0.00488	0.00662	0.00451	0.00466	0.00437	0.00475	0.00456	0.00398	0.00354
0.01554	0.00945	0.00678	0.00497	0.01144	0.00697	0.00771	0.00568	0.00525
0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00004	0.00002
0.00403	0.00634	0.00422	0.00453	0.00422	0.00461	0.00442	0.00384	0.00341
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00028	0.00013	0.00009	0.00009	0.00008	0.00008	0.00010	0.00007	0.00007
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00433	0.00648	0.00433	0.00463	0.00432	0.00471	0.00453	0.00395	0.00350
0.00085	0.00028	0.00028	0.00013	0.00014	0.00014	0.00014	0.00014	0.00013
0.01525	0.00831	0.00688	0.00486	0.01135	0.00688	0.00760	0.00560	0.00516
0.01030	0.00634	0.00422	0.00453	0.00720	0.00461	0.00442	0.00384	0.00341
0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00001	0.00000
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
8.01	8.82	7.94	9.04	8.27	8.20	8.00	8.39	8.22
8.01	8.82	7.94	9.04	8.27	8.20	8.00	8.39	8.22
0.01030	0.00485	0.00263	0.00275	0.00720	0.00263	0.00263	0.00242	0.00215
0.00403	0.00634	0.00422	0.00453	0.00422	0.00461	0.00442	0.00384	0.00341
0.00403	0.00634	0.00422	0.00453	0.00422	0.00461	0.00442	0.00384	0.00341
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
0.01030	0.00485	0.00263	0.00275	0.00222	0.00263	0.00263	0.00242	0.00215
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.01030	0.00634	0.00422	0.00453	0.00422	0.00461	0.00442	0.00384	0.00341



Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name
TP/WS/BH
Depth (m)
Envirolab reference

TP/WS/BH			TP2	TP6	TP14	TP24	TP05	TP07	TP08	TP09	TP11
Depth (m)			0.20	0.20	0.10	0.30	0.10	0.20	0.20	0.20	0.20
Envirolab reference			0.30	0.30	0.20	0.40	0.20	0.30	0.30	0.30	0.30
Ecotoxic HP14 amended v8	25%	<0.1%	0.03341	0.02219	0.01875	0.01400	0.02638	0.01817	0.01973	0.01618	0.01554
Ecotoxic HP14 amended v8	25%	<0.1% / 1.0%	0.03341	0.02219	0.01875	0.01400	0.02708	0.01817	0.02223	0.01618	0.01554
Ecotoxic HP14 amended v8	25%	<0.1% / 1.0%	3.34080	2.21890	1.87490	1.40050	2.64490	1.81660	1.99810	1.61770	1.55389
Persistent Organic Pollutant (PCB, PBB or POP Pesticides)	<0.0001%		0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Persistent Organic Pollutant (Total Dioxins+Furans)	<0.000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000
Persistent Organic Pollutant (Individual Dioxins+Furans)	<0.000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000

If other contaminants need adding to Haswaste, please contact Envirolab.



Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste developed by Dr. Iain Haslock.

Site Code and Name

TP/WS/BH

Depth (m)

Envirolab reference

TP12

0.20

0.30

% Moisture	%								
pH (soil)		7.2							
pH (leachate)									
Arsenic	mg/kg	2							
Cadmium	mg/kg	1							
Copper	mg/kg	26							
CrVI or Chromium	mg/kg	23							
Lead	mg/kg	82							
Mercury	mg/kg	0.22							
Nickel	mg/kg	15							
Selenium	mg/kg	2							
Zinc	mg/kg	97							
Barium	mg/kg								
Beryllium	mg/kg								
Vanadium	mg/kg								
Cobalt	mg/kg								
Manganese	mg/kg								
Molybdenum	mg/kg								
Antimony	mg/kg								
Aluminium	mg/kg								
Bismuth	mg/kg								
Chlorine	mg/kg								
Iron	mg/kg								
Strontium	mg/kg								
Tellurium	mg/kg								
Thallium	mg/kg								
Titanium	mg/kg								
Tungsten	mg/kg								
Ammoniacal N	mg/kg								
vs Boron	mg/kg								
PAH (Input Total PAH OR individual PAH results)									
Acenaphthene	mg/kg	0.01							
Acenaphthylene	mg/kg	0.01							
Anthracene	mg/kg	0.02							
Benzo(a)anthracene	mg/kg	0.04							
Benzo(a)pyrene	mg/kg	0.04							
Benzo(b)fluoranthene	mg/kg	0.05							
Benzo(g,h)perylene	mg/kg	0.05							
Benzo(k)fluoranthene	mg/kg	0.07							
Chrysene	mg/kg	0.06							
Dibenzo(a,h)anthracene	mg/kg	0.04							
Fluoranthene	mg/kg	0.08							
Fluorene	mg/kg	0.01							
Indeno(123cd)pyrene	mg/kg	0.05							
Naphthalene	mg/kg	0.03							
Phenanthrene	mg/kg	0.03							
Pyrene	mg/kg	0.07							
Coronene	mg/kg	0.08							
Total PAHs (16 or 17)	mg/kg								
TPH									
Petrol	mg/kg								
Diesel	mg/kg								
Lube Oil	mg/kg								
Crude Oil									
White Spirit / Kerosene	mg/kg								
Creosote	mg/kg								
Unknown TPH with ID	mg/kg								
Unknown TPHCWG	mg/kg	8							
Total Sulphide	mg/kg								
Complex Cyanide	mg/kg								
Free (or Total) Cyanide	mg/kg								
Thiocyanate	mg/kg								
Elemental/Free Sulphur	mg/kg								
Phenols Input Total Phenols HPLC OR individual Phenol results.									
Phenol	mg/kg								
Cresols	mg/kg								
Xylenols	mg/kg								
Resorcinol	mg/kg								
Phenols Total by HPLC	mg/kg								
BTEX Input Total BTEX OR individual BTEX results.									
Benzene	mg/kg	0.01							
Toluene	mg/kg	0.01							
Ethylbenzene	mg/kg	0.01							
Xylenes	mg/kg	0.01							
Total BTEX	mg/kg								
PCBs (POPs)									
PCBs Total (eg EC7/WHO12)	mg/kg								
PBBs (POPs)									
Hexabromobiphenyl (Total or PBB153, 2,2',4,4',5,5' if only available)	mg/kg								



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TP12

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0.30

POPs Dioxins and Furans Input Total Dioxins and Furans
OR Individual Dioxin and Furan results.

2,3,7,8-TeCDD	mg/kg								
1,2,3,7,8-PeCDD	mg/kg								
1,2,3,4,7,8-HxCDD	mg/kg								
1,2,3,6,7,8-HxCDD	mg/kg								
1,2,3,7,8,9-HxCDD	mg/kg								
1,2,3,4,6,7,8-HpCDD	mg/kg								
OCDD	mg/kg								
2,3,7,8-TeCDF	mg/kg								
1,2,3,7,8-PeCDF	mg/kg								
2,3,4,7,8-PeCDF	mg/kg								
1,2,3,4,7,8-HxCDF	mg/kg								
1,2,3,6,7,8-HxCDF	mg/kg								
2,3,4,6,7,8-HxCDF	mg/kg								
1,2,3,7,8,9-HxCDF	mg/kg								
1,2,3,4,6,7,8-HpCDF	mg/kg								
1,2,3,4,7,8,9-HpCDF	mg/kg								
OCDF	mg/kg								
Total Dioxins and Furans	mg/kg								

Some Pesticides (POPs unless otherwise stated)

Aldrin	mg/kg								
α-Hexachlorocyclohexane (alpha-HCH) (leave empty if total HCH results used)	mg/kg								
β-Hexachlorocyclohexane (beta-HCH) (leave empty if total HCH results used)	mg/kg								
α-Cis-Chlordane (alpha) OR Total Chlordane	mg/kg								
δ-Hexachlorocyclohexane (delta-HCH) (leave empty if total HCH results used)	mg/kg								
Dieldrin	mg/kg								
Endrin	mg/kg								
γ-Hexachlorocyclohexane (gamma-HCH) (lindane) OR Total HCH	mg/kg								
Heptachlor	mg/kg								
Hexachlorobenzene	mg/kg								
o,p'-DDT (leave empty if total DDT results used)	mg/kg								
p,p'-DDT OR Total DDT	mg/kg								
γ-Trans-Chlordane (gamma) (leave empty if total Chlordane results used)	mg/kg								
Chlordecone (kepone)	mg/kg								
Pentachlorobenzene	mg/kg								
Mirex	mg/kg								
Toxaphene (camphchlor)	mg/kg								

Tin

Tin (leave empty if Organotin and Tin excl Organotin results used)	mg/kg								
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Organotin

Dibutyltin, DiBT	mg/kg								
Tributyltin, TriBT	mg/kg								
Triphenyltin, TriPT	mg/kg								
Tetrabutyltin, TeBT	mg/kg								

Tin excluding Organotin

Tin excl Organotin	mg/kg								
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Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Asbestos in Soil	Thresholds
Asbestos detected in Soil (enter Y or N)	N

Asbestos % Composition in Soil (Matrix Loose Fibres or Microscopic Identifiable Pieces only)	see "Caro HP7 % Asbestos in Soil (Fibres)" below
Carcinogenic HP7 % Asbestos in Soil (fibres or micro pieces)	<0.1%
Please be advised, if the calculation cell is "0.00000" DOES NOT MEAN asbestos testing has been undertaken and the result is zero.	

Asbestos Identifiable Pieces visible with the naked eye detected in the Soil (enter Y or N)	N
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If Asbestos in Soil above is "Y", the soil is Hazardous Waste HP5 and HP7

0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

If Asbestos in Soil above is "Y", but Asbestos % above is "<0.1%", the soil is Non-Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use Asbestos % results when visual identifiable pieces are present.

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If visual identifiable pieces of asbestos are present, you cannot use Asbestos % results and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 17 06 05. Therefore, if Asbestos in Soil above is "Y", the Asbestos % above is "<0.1%", but the Asbestos Identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.

Identifiable Pieces are Cement, Fragments, Board, Rope etc. ie anything ACM that is not Loose Fibres.

All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.

Hazardous Property	Thresholds	Cut Off Value
Corrosive HP8	>50%	<1%
Irritant HP4	>10%	<1%
Irritant HP4	>50%	<1%
Specific Target Organ Toxicity HP5	>1%	
Specific Target Organ Toxicity HP5	>20%	
Specific Target Organ Toxicity HP5	>1%	
Specific Target Organ Toxicity HP5	>10%	
Aspiration Toxicity HP5	>10%	
Acute Toxicity HP6 (Oral)	>0.1%	<0.1%
Acute Toxicity HP6 (Oral)	>0.25%	<0.1%
Acute Toxicity HP6 (Oral)	>5%	<0.1%
Acute Toxicity HP6 (Oral)	>25%	<1%
Acute Toxicity HP6 (Dermal)	>0.25%	<0.1%
Acute Toxicity HP6 (Dermal)	>5.5%	<0.1%
Acute Toxicity HP6 (Dermal)	>15%	<0.1%
Acute Toxicity HP6 (Dermal)	>55%	<1%
Acute Toxicity HP6 (Inhal)	>0.1%	<0.1%
Acute Toxicity HP6 (Inhal)	>0.5%	<0.1%
Acute Toxicity HP6 (Inhal)	>5.5%	<0.1%
Acute Toxicity HP6 (Inhal)	>22.5%	<1%
Carcinogenic HP7	>0.1%	
Carcinogenic HP7	>0.5%	
Carcinogenic HP7	>1%	
Carcinogenic HP7 Unknown TPH with ID	>1,000mg/kg	
Carcinogenic HP7 (b)(p) marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	>0.01%	
pH Corrosive HP8 pH (soil or leachate)	>12.5	
pH Corrosive HP8 pH (soil or leachate)	>18.52	
Toxic for Reproduction HP10	>0.5%	
Toxic for Reproduction HP10	>5%	
Mutagenic HP11	>0.1%	
Mutagenic HP11 Unknown TPH with ID	>1,000mg/kg	
Mutagenic HP11 (b)(p) marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	>0.05%	
Mutagenic HP11	>1%	
Produces Toxic Gases HP12 Sulphide	>1,000mg/kg	
Produces Toxic Gases HP12 Cyanide	>1,000mg/kg	
Produces Toxic Gases HP12 Thiocyanate	>2,000mg/kg	
HP13 Sensitising	>10%	

If cells below turn yellow and the text turns red, the samples should be classified as Hazardous Waste.

0.00468	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00320	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00599	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00442	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00820	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00080	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00029	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00470	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.01428	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00002	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00442	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00454	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00028	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.01417	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00820	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
7.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00820	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00442	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00442	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
0.00303	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.00442	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000



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Ecotoxic HP14 amended v8	25%	<0.1%	0.03144	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v8	25%	<0.1% / 1.0%	0.03224	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v8	25%	<0.1% / 1.0%	3.15170	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Persistent Organic Pollutant (PCB, PBB or POP Pesticides)	<0.0001%		0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Persistent Organic Pollutant (Total Dioxins+Furans)	<0.000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000
Persistent Organic Pollutant (Individual Dioxins+Furans)	<0.000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000

If other contaminants need adding to Haswaste, please contact Envirolab.