

APPENDIX J

Import specification

Table 1. Maximum permissible concentrations for imported capping layer soils.

Determinant		Maximum permissible concentration ¹ (mg/kg) ²				Rationale
		Residential with plant uptake		Residential without plant uptake		
		6% SOM	1% SOM	6% SOM	1% SOM	
Arsenic		32	32	35	35	GAC ⁴
Beryllium		56	56	88	88	GAC ⁴
Boron		5	5	5	5	Limit for phytotoxic effect ⁵
Cadmium		11	11	87	87	GAC ⁴
Chromium (III)		3,200	3,200	3,300	3,300	GAC ⁴
Chromium (VI)		6.3	6.3	6.3	6.3	GAC ⁴
Lead		200	200	310	310	C4SL ¹⁰
Mercury		180	180	250	250	GAC ⁴
Selenium		350	350	600	600	GAC ⁴
Copper		135 ³	135 ³	135 ³	135 ³	BS 3882:2007 Specification for Topsoil ³
Nickel		75 ³	75 ³	75 ³	75 ³	BS 3882:2007 Specification for Topsoil ³
Zinc		200 ³	200 ³	200 ³	200 ³	BS 3882:2007 Specification for Topsoil ³
Vanadium		720	720	1100	1100	GAC ⁴
Benzo(a)pyrene		3.3	2.4	3.6	3.6	GAC ⁴
Benzo(a)anthracene		19	11	22	18	GAC ⁴
Benzo(b)fluoranthene		21	14	23	23	
Benzo(k)fluoranthene		21	16	23	23	
Chrysene		190	100	230	220	
Dibenzo(a,h)anthracene		2.2	1.7	2.3	2.2	
Indeno(1,2,3-cd)pyrene		20	13	23	26	
Naphthalene		29	5	35	6.3	
TPH aliphatic ⁶	EC5-6	260	80	260	80	GAC ⁴
	EC>6-8	750	160	750	160	GAC ⁴
	EC>8-10	190	34	190	34	GAC ⁴
	EC>10-12	1,000 ⁷	1,000 ⁷	1,000 ⁷	1,000 ⁷	Hazardous waste threshold ⁷
	EC>12-16	1,000 ⁷	1,000 ⁷	1,000 ⁷	1,000 ⁷	Hazardous waste threshold ⁷
	EC>16-35	1,000 ⁷	1,000 ⁷	1,000 ⁷	1,000 ⁷	Hazardous waste threshold ⁷
TPH aromatic ⁶	EC5-7	0.43	0.10	3.2	0.88	GAC ⁴
	EC>7-8	720	140	1,000 ⁷	870	GAC ⁴ / Hazardous waste threshold ⁷
	EC>8-10	210	37	310	55	GAC ⁴
	EC>10-12	390	75	1,000	290	GAC ⁴ / Hazardous waste threshold ⁷
	EC>12-16	660	140	1,000 ⁷	1,000 ⁷	GAC ⁴ / Hazardous waste threshold ⁷
	EC>16-21	990	290	1,000 ⁷	1,000 ⁷	GAC ⁴ / Hazardous waste threshold ⁷
	EC>21-35	1,000 ⁷	1,000 ⁷	1,000 ⁷	1,000 ⁷	Hazardous waste threshold ⁷
Sum of TPH aliphatic & aromatic C5-C10		< 1,000	< 1,000	< 1,000	< 1,000	Hazardous waste thresholds ⁸ (C10+ MPC based on threshold for C25+)
Sum of TPH aliphatic & aromatic C10+		< 1,000	< 1,000	< 1,000	< 1,000	
pH		5-10	5-10	5-10	5-10	
Phenols		1,200	280	6,000	2,000	GAC ⁴
Asbestos		No detectable fibres ⁹				

Notes:

- These maximum permissible concentrations (MPCs) are import criteria only and are not necessarily appropriate for human health risk assessment.
- In mg/kg dry soil except pH and asbestos.
- British Standard BS3882:2015 Specification for Topsoil and requirements for use. Table 1. Values taken for pH 6-7.
- Generic Assessment Criteria generated 'in-house' based on CLEA model Version 1.06. Barium and total cyanide GACs are derived from previously endorsed human health risk assessment models and are conservative values with reference to Dutch Intervention Values.
- Nable, Banuelos and Paul. (1997). *Boron Toxicity*. Plant and Soil, **Vol. 193**, pp1 81-198.
- Speciated TPH values must not exceed GAC, or hazardous waste threshold, where indicated above. Assessment of TPH must be made against hazardous waste threshold to confirm imported soils do not classify as hazardous material.
- GAC derived MPC for TPH fraction limited to 1,000mg/kg based on 'waste thresholds'.
- Environment Agency. (2007). *A Guide to Hazardous Waste Regulations: How to find out if waste oil and waste that contain oil are hazardous*. HWR08.
- Laboratory screen by microscopy may be required subject to source of material.
- Published C4SL for lead (DEFRA, 2014)