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Appendix 8:

Selected water quality standards

The following selected water-quality standards are to be used in assessing the presence of pollution in controlled waters. It is important to note that the tables are for general guidance only and care should be exercised when applying these for specific purposes. This information is necessarily summarised. It may be necessary to refer back to the original source of the data for qualifying/clarifying information.

Water-quality standards should be used only where they are relevant to the site being assessed.

Key to standards referenced

- 1 Figures for Environmental Quality Standards (EQS) are Annual Average Concentrations with Maximum Allowable Concentrations in brackets.

Where a range of EQS for freshwater is given, it depends on the hardness of the water. Seek further advice from the Agency.

- 2 World Health Organisation (WHO) *Guidelines for Drinking Water Quality*, 1984.

The health value is a guideline value representing the concentration of a constituent that does not result in any significant risk to the consumer over a lifetime of exposure.

The ATO is the concentration of the substance, at or below the health-based guideline value, which may affect the appearance, taste or odour of the water. The concentrations given are those likely to give rise to consumer complaints.

- 3 Council Directive 98/83/EC on the quality of water intended for human consumption.

- 4 UK Drinking Water Standards taken from:

- Water Supply (Water Quality) Regulations 1989 (SI 1989/1147) (as amended);
- Water Supply (Water Quality) Regulations 2000 (SI 2000/3184) (as amended).

Contaminant	units	EQS freshwater (1)	EQS saltwater (1)	WHO Health (2)	WHO ATO (2)	EU Drinking Water Standards (3)	UK Drinking Water Standards (4)
Acrylamide	ug/l			0.5		0.1	0.1
Alachlor	ug/l			20		0.1	0.1
Aldicarb	ug/l			10		0.1	0.1
Aldrin	ug/l	0.01	0.01	0.03		0.03	0.03
Aluminium	ug/l				200	200	200
Ammonia (NH ₃ as N)	mg/l	0.015	0.021		1.5		
Ammonium (as NH ₄ ⁺)	mg/l					0.5	0.5
Antimony	ug/l			5		5	5
Arsenic	ug/l	50	25	10		10	10
Atrazine	ug/l	2	2	2		0.1	0.1
Azinphos-methyl	ng/l	10 (40)	10 (40)			100	100
Barium	mg/l			0.7			1
Bentazone	mg/l	0.5	0.5	0.03		0.1	0.1
Benzene	ug/l	30 (300)	30 (300)	10		1	1
Benzo [a] pyrene	ug/l			0.7		0.01	0.01
Biphenyl	ug/l	25	25				
Boron	mg/l	2	7	0.3		1	1
Bromate	ug/l					10	10
Bromoxynil	ug/l	100 (1000)	100 (1000)			0.1	0.1
Cadmium	ug/l	5	2.5	3		5	5
Calcium	mg/l						250
Carbofuran	ug/l			5		0.1	0.1
Chlordane (all isomers)	ug/l			0.2		0.1	0.1
Chlorfenvinphos	ug/l	0.01 (0.1)	0.01 (0.1)			0.1	0.1
Chloride	mg/l	250			250	250	250
Chlorine	ug/l	2	10				
Chloroform	ug/l	12	12	200			
Chloroform extractable substances	ug/l						1000
Chlorophenylid	ug/l	0.05	0.05			0.1	0.1
Chloronitrotoluenes	ug/l	10	10				
Chlorothalonil	ug/l	0.1	0.1			0.1	0.1
Chlorpropham	ug/l	10	10			0.1	0.1
Chlorotoluron	ug/l	2	2	30		0.1	0.1
Chromium	ug/l	5 - 250	15	50		50	50
Copper	ug/l	1 - 28	5	2000	1000	2000	2000
Coumaphos	ug/l	0.01 (0.1)	0.04 (0.4)			0.1	0.1
Cyanide	ug/l			70		50	50
Cyfluthrin	ug/l	0.001	0.001			0.1	0.1

Contaminant	units	EQS freshwater (1)	EQS saltwater (1)	WHO Health (2)	WHO ATO (2)	EU Drinking Water Standards (3)	UK Drinking Water Standards (4)
2,4-dichlorophenoxyacetic acid (2,4-D), (ester form)	ug/l	1	1	30		0.1	0.1
Demetons	ug/l	0.5	0.5			0.1	0.1
Diazinon	ug/l	0.01 (0.1)	0.015 (0.15)			0.1	0.1
Dichlorodiphenyltrichloroethane (all isomers)	ug/l	0.025	0.025				
Para, para-DDT	ug/l	0.01	0.01	2		0.1	0.1
1,2-Dichloroethane (1,2-DCA)	ug/l	10	10	30		3	3
1,1-Dichloroethene (1,1-DCE)	ug/l			30			
1,2-Dichloroethene (1,2-DCE)	ug/l			50			
1,2-dibromo-3-chloropropane	ug/l			1		0.1	0.1
1,2-Dichlorobenzene	ug/l			1000	1 to 10		
1,2-Dichloropropane	ug/l			20		0.1	0.1
1,3-Dichloropropene	ug/l			20		0.1	0.1
1,4-Dichlorobenzene	ug/l			300	0.3 to 30		
Di(2-ethylhexyl)adipate	ug/l			80			
Di(2-ethylhexyl)phthalate	ug/l			8			
Dichloromethane	ug/l			20			
Dichlorprop (DCPP)	ug/l			100		0.1	0.1
Dichlorvos	ng/l	1	40			100	100
Dieldrin	ug/l	0.01	0.01	0.03		0.03	0.03
Dimethoate	ug/l	1	1			0.1	0.1
Drins (total)	ug/l	0.03	0.03			0.1	0.1
Edetic Acid (EDTA)	ug/l			200			
Endosulfan	ng/l	3	3			100	100
Endrin	ug/l	0.005	0.005			0.1	0.1
Epichlorohydrin	ug/l			0.4		0.1	0.1
Ethylbenzene	ug/l			300	2 to 200		
Fenchlorphos	ug/l	0.01 (0.1)	0.01 (0.1)			0.1	0.1
Fenoprop	ug/l			9		0.1	0.1
Fenitrothion	ng/l	10 (250)	10 (250)			100	100
Flucifuron	ug/l	1				0.1	0.1
Fluoride	ug/l			1500		1500	1500
Formaldehyde	ug/l	5 (50)	n/a	900		0.1	0.1
Heptachlor	ug/l			0.03		0.03	0.03
Hexachlorobenzene	ug/l	0.03	0.03	1		0.1	0.1
Hexachlorobutadiene	ug/l	0.1	0.1	0.6			
Hexachlorocyclohexane (lindane)	ug/l	0.1	0.02	2		0.1	0.1
Hydrocarbons (dissolved/emulsions)	ug/l						10
Hydrogen sulphide (H2S as S)	ug/l	0.25 to 1.0	10				

Contaminant	units	EQS freshwater (1)	EQS saltwater (1)	WHO Health (2)	WHO ATO (2)	EU Drinking Water Standards (3)	UK Drinking Water Standards (4)
Ioxynil	ug/l	10 (100)	10 (100)			0.1	0.1
Iron	mg/l	1	1		0.3	0.2	0.2
Isodrin	ug/l	0.005	0.005			0.1	0.1
Isoproturon	ug/l	2 to 20		9		0.1	0.1
Lead (inorganic - dissolved)	ug/l	4 - 250	25	10		10	25 (reducing to 10)
Linuron	ug/l	2	2			0.1	0.1
Magnesium	mg/l						50
Malachite green	ug/l	0.5 (100)					
Malathion	ng/l	10 (500)	20 (500)			100	100
Manganese	ug/l			500	100	50	50
MCPA	ug/l	2	2	2		0.1	0.1
Mecoprop (MCP)	ug/l	20 (200)	20 (200)	10		0.1	0.1
Mercury	ug/l	1	0.3	1		1	1
Methylbenzene	ug/l	50 (500)	40				
Methoxychlor	ug/l			20		0.1	0.1
Metolachlor	ug/l			10		0.1	0.1
Molinate	ug/l			6		0.1	0.1
Molybdenum	ug/l			70			
Monochlorobenzene	ug/l			300	10 to 120		
Naphthalene	ug/l	10 (100)	5 (80)				
Nickel	ug/l	50 - 200	30	20		20	20
Nitrate (as NO ₃)	mg/l			50		50	50
Nitrite (as NO ₂)	ug/l			3		500	100
Nitriloacetic acid	ug/l			200			
Oils/hydrocarbons (by Pet Ether extract)	ug/l						10
Omethoate	ug/l	0.01				0.1	0.1
Polycyclic Aromatic (PAH) Hydrocarbons	ug/l					0.1	0.1
Pendimethalin	ug/l			20		0.1	0.1
Pentachlorophenol	ug/l	2	2	9		0.1	0.1
Permethrin	ug/l	0.01		20		0.1	0.1
Pesticides (individual species, unless specified)	ug/l					0.1	0.1
Pesticides (total)	ug/l					0.5	0.5
Phenol	ug/l	30 (300)	30 (300)			0.5	0.5
Pirimicarb	ug/l	1	1			0.1	0.1
Phosphorous	ug/l					400 (5000)	2200
Potassium	mg/l					10 (12)	12

Contaminant	units	EQS freshwater (1)	EQS saltwater (1)	WHO Health (2)	WHO ATO (2)	EU Drinking Water Standards (3)	UK Drinking Water Standards (4)
Propanil	ug/l			20		0.1	0.1
Propetamphos	ug/l	0.01 (0.1)	0.01 (0.1)			0.1	0.1
Pryidate	ug/l			100		0.1	0.1
Selenium	ug/l			10		10	10
Silver	ug/l	0.05 (0.1)	0.5 (1)				10
Simazine	ug/l	2 (10)	2 (10)	2		0.1	0.1
Sodium	mg/l	170			200	200	200
Styrene	ug/l	50 (500)	50 (500)	20	4 to 2600		
Sulcofuron	ug/l	25	25			0.1	0.1
Sulphate	mg/l	400	250		250	250	250
Sulphide	ug/l	0.25	n/a				
Surfactants	ug/l						200
2,4,5-trichlorophenoxyacetic acid (2,4,5-T)	ug/l			9		0.1	0.1
Tecnazene	ug/l	1 (10)	1				
Tetrachloroethene (PCE)	ug/l	10	10	40		10 (with TCE)	10 (with TCE)
Tetrachloromethane (PCM, carbon tetrachloride)	ug/l	12	12	2			3
Thiabendazole	ug/l	5	5			0.1	0.1
Tin (inorganic)	ug/l	25	10				
Toluene	ug/l	50 (500)	40 (400)	700	24 to 170		
Triazophos	ng/l	5 (50)	5 (50)			100	100
Tributyltin (oxide)	ug/l	0.02	0.02	0.02			
1,1,1-Trichloroethane (1,1,1-TCA)	ug/l	100 (1000)	100 (1000)				
1,1,2-Trichloroethane (1,1,2-TCA)	ug/l	400 (4000)	300 (3000)				
Trichloroethene (TCE)	ug/l	10	10	70		10 (with PCE)	10 (with PCE)
Trichlorobenzenes (total)	ug/l	0.4	0.4	20	5 to 50		
2,4,6-Trichlorophenol	ug/l			200		2-300	
Trihalomethanes (total)	ug/l					150 reducing to 100 by 2008	100
Trifluralin	ug/l	0.1 (1)	0.1 (1)	20		0.1	0.1
Triphenyltin	ug/l	0.02	0.008				
Vanadium	ug/l	20 - 60	100				
Vinyl chloride (chloroethene)	ug/l			5		0.5	0.5
Xylene	ug/l	30	30	500	20 to 1800		
Zinc	ug/l	8 - 500			3000		5000

Note: A range of values may be given for the Environmental Quality Standard (EQS) for an individual substance in the table above.

Typically, a range for metals (for example, vanadium: 20 – 60 µg/l) relates to an acceptable concentration in waters of different hardness. Where the hardness of the receiving waters is not known, it will be appropriate to use the lowest (most stringent value).

Some organic contaminants are given two values (for example, toluene: 50 (500) µg/l). These values normally relate to an acceptable annual average concentration, followed in brackets by a maximum admissible peak concentration. It is appropriate to consider the annual average (that is, the first and lower value) in assessing the pollution potential over a period of time.