Appendix 2.2 - Drinking Water Quality Standard

Table 1 - Chemicals of Health Significance as described by World Health Organization Guidelines (WHO) for Drinking-water Quality in third edition (2008) and fourth edition (2011)

Parameter	Unit	WHO 3rd edition (2008) Guideline Value	Parameter	Unit	Latest WHO 4th edition (2011) Guideline Value
Acrylamide	µg/L	0.5	Acrylamide	µg/L	0.5
Alachlor	µg/L	20	Alachlor	µg/L	20
Aldicarb	µg/L	10	Aldicarb	µg/L	10
Aldrin and Dieldrin	µg/L	0.03	Aldrin and Dieldrin	µg/L	0.03
Antimony	mg/L	0.02	Antimony	mg/L	0.02
Arsenic	mg/L	0.01 (P)	Arsenic	mg/L	0.01 (A,T)
Atrazine	µg/L	2	Atrazine and its chloro-s-triazine metabolites	µg/L	100
Barium	mg/L	0.7	Barium	mg/L	0.7
Benzene	µg/L	10	Benzene	µg/L	10
Benzo[a]pyrene	µg/L	0.7	Benzo[a]pyrene	µg/L	0.7
Boron	mg/L	0.5 (T)	Boron	mg/L	2.4
Bromate	µg/L	10 (A,T)	Bromate	µg/L	10 (A,T)
Bromodichloromethane	µg/L	60	Bromodichloromethane	µg/L	60
Bromoform	µg/L	100	Bromoform	µg/L	100
Cadmium	mg/L	0.003	Cadmium	mg/L	0.003
Carbofuran	µg/L	7	Carbofuran	µg/L	7
Carbon tetrachloride	µg/L	4	Carbon tetrachloride	µg/L	4
Chlorate	µg/L	700 (D)	Chlorate	µg/L	700 (D)
Chlordane	µg/L	0.2	Chlordane	µg/L	0.2
Chlorine	mg/L	5 (C)	Chlorine	mg/L	5 (C)
Chlorite	µg/L	700 (D)	Chlorite	µg/L	700 (D)
Chloroform	µg/L	300	Chloroform	µg/L	300
Chlorotoluron	µg/L	30	Chlorotoluron	µg/L	30
Chlorpyrifos	µg/L	30	Chlorpyrifos	µg/L	30
Chromium	mg/L	0.05 (P)	Chromium	mg/L	0.05 (P)
Copper	mg/L	2	Copper	mg/L	2
Cyanazine	µg/L	0.6	Cyanazine	µg/L	0.6
Cyanide	mg/L	0.07	-	-	-
Cyanogen chloride	mg/L	0.07	-	-	-
2,4-D (2,4-dichlorophenoxyacetic acid)	µg/L	30	2,4-D (2,4-dichlorophenoxyacetic acid)	µg/L	30
2,4-DB (2,4-dichlorophenoxybutyric acid)	µg/L	90	2,4-DB (2,4-dichlorophenoxybutyric acid)	µg/L	90
DDT (Dichlorodiphenyltrichlorethane) and metabolites	µg/L	1	DDT (Dichlorodiphenyltrichlorethane) and metabolites	µg/L	1
Di(2-ethylhexyl)phthalate	µg/L	8	Di(2-ethylhexyl)phthalate	µg/L	8
Dibromoacetonitrile	µg/L	70	Dibromoacetonitrile	µg/L	70
Dibromochloromethane	µg/L	100	Dibromochloromethane	µg/L	100
1,2-Dibromo-3-chloropropane	µg/L	1	1,2-Dibromo-3-chloropropane	µg/L	1
1,2-Dibromoethane	µg/L	0.4 (P)	1,2-Dibromoethane	µg/L	0.4 (P)
Dichloroacetate	µg/L	50 (T,D)	Dichloroacetate	µg/L	50 (D)
Dichloroacetonitrile	µg/L	20 (P)	Dichloroacetonitrile	µg/L	20 (P)

1,2-Dichlorobenzene	µg/L	1000 (C)	1,2-Dichlorobenzene	µg/L	1000 (C)
1,4-Dichlorobenzene	µg/L	300 (C)	1,4-Dichlorobenzene	µg/L	300 ©
1,2-Dichloroethane	µg/L	30	1,2-Dichloroethane	µg/L	30
1,2-Dichloroethene	µg/L	50	1,2-Dichloroethene	µg/L	50
Dichloromethane	µg/L	20	Dichloromethane	µg/L	20
1,2-Dichloropropane	µg/L	40 (P)	1,2-Dichloropropane	µg/L	40 (P)
1,3-Dichloropropene	µg/L	20	1,3-Dichloropropene	µg/L	20
Dichlorprop	µg/L	100	Dichlorprop	µg/L	100
Dimethoate	µg/L	6	Dimethoate	µg/L	6
1,4-Dioxane	µg/L	50	1,4-Dioxane	µg/L	50
Edetic acid (EDTA)	µg/L	600	Edetic acid	µg/L	600
Endrin	µg/L	0.6	Endrin	µg/L	0.6
Epichlorohydrin	µg/L	0.4 (P)	Epichlorohydrin	µg/L	0.4 (P)
Ethylbenzene	µg/L	300 (C)	Ethylbenzene	µg/L	300 (C)
Fenoprop	µg/L	9	Fenoprop	µg/L	9
Fluoride	mg/L	1.5	Fluoride	mg/L	1.5
Hexachlorobutadiene	µg/L	0.6	Hexachlorobutadiene	µg/L	0.6
-	-	-	Hydroxyatrazine	µg/L	200
Isoproturon	µg/L	9	Isoproturon	µg/L	9
Lead	mg/L	0.01	Lead	mg/L	0.01 (A,T)
Lindane	µg/L	2	Lindane	µg/L	2
Manganese	mg/L	0.4 (C)	-	-	-
MCPA (4-(2-Methyl-4-chlorophenoxy) acetic acid)	µg/L	2	MCPA (4-(2-Methyl-4-chlorophenoxy) acetic acid)	µg/L	2
Mecoprop	µg/L	10	Mecoprop	µg/L	10
Mercury	mg/L	0.006	Mercury	mg/L	0.006
Methoxychlor	µg/L	20	Methoxychlor	µg/L	20
Metolachlor	µg/L	10	Metolachlor	µg/L	10
Microcystin-LR	µg/L	1 (P)	Microcystin-LR	µg/L	1 (P)
Molinate	µg/L	6	Molinate	µg/L	6
Molybdenum	mg/L	0.07	-	-	-
Monochloramine	mg/L	3	Monochloramine	mg/L	3
Monochloroacetate	µg/L	20	Monochloroacetate	µg/L	20
Nickel	mg/L	0.07	Nickel	mg/L	0.07
Nitrate (as NO_3^-)	mg/L	50	Nitrate (as NO_3^-)	mg/L	50
Nitrilotriacetic acid (NTA)	µg/L	200	Nitrilotriacetic acid	µg/L	200
Nitrite (as NO_2^-)	mg/L	3	Nitrite (as NO_2^-)	mg/L	3
N-Nitrosodimethylamine (NDMA)	µg/L	100	*N*-Nitrosodimethylamine	µg/L	0.1
Pendimethalin	µg/L	20	Pendimethalin	µg/L	20
Pentachlorophenol	µg/L	9 (P)	Pentachlorophenol	µg/L	9 (P)
Permethrin	µg/L	300	-	-	-
Pyriproxyfen	µg/L	300	-	-	-
Selenium	mg/L	0.01	Selenium	mg/L	0.04 (P)
Simazine	µg/L	2	Simazine	µg/L	2
Sodium dichloroisocyanurate (as cyanuric acid)	mg/L	40	Sodium dichloroisocyanurate (as cyanuric acid)	mg/L	40
Styrene	µg/L	20 (C)	Styrene	µg/L	20 (C)
2,4,5-T	µg/L	9	2,4,5-T (2,4,5-trichlorophenoxy acetic acid)	µg/L	9
Terbuthylazine	µg/L	7	Terbuthylazine	µg/L	7
Tetrachloroethene	µg/L	40	Tetrachloroethene	µg/L	40
Toluene	µg/L	700 (C)	Toluene	µg/L	700 (C)
Trichloroacetate	µg/L	200	Trichloroacetate	µg/L	200

Trichloroethene	µg/L	20 (P)	Trichloroethene	µg/L	20 (P)
2,4,6-Trichlorophenol	µg/L	200 (C)	2,4,6-Trichlorophenol	µg/L	200 (C)
Trifluralin	µg/L	20	Trifluralin	µg/L	20
Trihalomethanes	-	The sum of the ratio of the concentration of each to its respective guideline value should not exceed 1	Trihalomethanes		The sum of the ratio of the concentration of each to its respective guideline value should not exceed 1
Uranium	mg/L	0.015 (P,T)	Uranium	mg/L	0.03 (P)
Vinyl chloride	µg/L	0.3	Vinyl chloride	µg/L	0.3
Xylenes	µg/L	500 (C)	Xylenes	µg/L	500 (C)

Note:

1. According to WHO Drinking-water Quality 3rd edition (2008):
   - P = provisional guideline value, as there is evidence of a hazard, but the available information on health effects is limited;
   - T = provisional guideline value because calculated guideline value is below the level that can be achieved through practical treatment methods, source protection, etc;
   - A = provisional guideline value because calculated guideline value is below the achievable quantification level;
   - D = provisional guideline value because disinfection is likely to result in the guideline value being exceeded;
   - C = concentrations of the substance at or below the health-based guideline value may affect the appearance, taste or odour of the water, leading to consumer complaints.

2. According to WHO Drinking-water Quality 4th edition (2011):
   - A = Provisional guideline value because calculated guideline value is below the achievable quantification level;
   - C = Concentrations of the substance at or below the health-based guideline value may affect the appearance, taste or odour of the water, leading to consumer complaints;
   - D = Provisional guideline value because disinfection is likely to result in the guideline value being exceeded;
   - P = Provisional guideline value because of uncertainties in the health database;
   - T = Provisional guideline value because calculated guideline value is below the level that can be achieved through practical treatment methods, source protection, etc.

Appendix 2.2 - Drinking Water Quality Standard

Table 2 - Other Water Quality Parameters

Parameter	**Existing Standard**	**Parameter**	**Standard for the Reprovisioned Sha Tin WTW South Works**
pH at 25°C	8.2 – 8.8	pH at 25°C	8.2 – 8.8
Colour	Not exceeding 5 Hazen units	Colour	Not exceeding 5 Hazen units
Turbidity	Not exceeding 1.5 NTU	Turbidity	Not exceeding 1.0 NTU, and not exceeding 0.3 NTU in 95% of daily samples in any month
Iron as Fe	Not exceeding 0.1 mg/L	Iron as Fe	Not exceeding 0.1 mg/L
Manganese as Mn	Not exceeding 0.05 mg/L	Manganese as Mn	Not exceeding 0.05 mg/L
Aluminium as Al	Not exceeding 0.10 mg/L	Aluminium as Al	Not exceeding 0.10 mg/L
Free residual chlorine	0.5 - 1.5 mg/L	Free residual chlorine	0.5 - 1.5 mg/L
Fluoride as F	± 10% of norminal level (current 0.5 mg/L)	Fluoride as F	± 10% of norminal level (current 0.5 mg/L)
Taste and odour	Unobjectionable	Taste and odour	Unobjectionable
Total Coliforms & E.coli (no./100mL)	Absent	Total Coliforms & E.coli (no./100mL)	Absent
-	-	Cryptosporidium	4-log (99.99%) reduction or inactivation
-	-	Giardia	4-log (99.99%) reduction or inactivation
-	-	Viruses	4-log (99.99%) reduction or inactivation