

Kungwini Municipality Water Quality Report

23 January 2009 to 19 February 2009

Date generated : 27 February 2009

Parameter	Units of measure	Specifications (based on SANS241: 2005)		No of results	Achieved compliance levels	
		Required compliance			Class I	Class II
		95% min to Class I	99% min to Class II			
SPECIFICATIONS						
Chemical and Physical properties						
Colour	(mg / l as Pt)	< 20	≤ 50	4	100.0%	100.0%
Conductivity	(mS / m)	< 150	≤ 370	12	100.0%	100.0%
pH	(pH units)	≥ 5 to ≤ 9.5	≥ 4 to ≤ 10	12	100.0%	100.0%
Turbidity	(NTU)	< 1	≤ 5	12	100.0%	100.0%
Total Dissolved Solids	(mg / l)	< 1000	≤ 2400	4	100.0%	100.0%
Taste	(FTN)	< 5	≤ 10	4	100.0%	100.0%
Odour	(TON)	< 5	≤ 10	4	100.0%	100.0%
Organic Determinants						
Total Trihalomethanes	(ug / l)	< 200	≤ 300	4	100.0%	100.0%
Phenols as C6H5OH	(ug / l)	< 10	≤ 70	4	100.0%	100.0%
Dissolved Organic Carbon	(mg / l)	< 10	≤ 20	4	100.0%	100.0%
Micro Elements						
Antimony	(ug / l as Sb)	< 10	≤ 50	2	100.0%	100.0%
Arsenic	(ug / l as As)	< 10	≤ 50	2	100.0%	100.0%
Cadmium	(ug / l as Cd)	< 5	≤ 10	4	100.0%	100.0%
Chromium (Total)	(ug / l as Cr)	< 100	≤ 500	4	100.0%	100.0%
Cobalt	(ug / l as Co)	< 500	≤ 1000	4	100.0%	100.0%
Cyanide (Recoverable)	(ug / l as CN)	< 50	≤ 70	4	100.0%	100.0%
Lead	(ug / l as Pb)	< 20	≤ 50	4	100.0%	100.0%
Mercury	(ug / l as Hg)	< 1	≤ 5	3	100.0%	100.0%
Nickel	(ug / l as Ni)	< 150	≤ 350	4	100.0%	100.0%
Selenium	(ug / l as Se)	< 20	≤ 50	2	100.0%	100.0%
Vanadium	(ug / l as V)	< 200	≤ 500	4	100.0%	100.0%
Macro Elements & Miscellaneous Determinants						
Aluminium	(mg / l as Al)	< 0.3	≤ 0.5	4	100.0%	100.0%
Ammonia	(mg / l as N)	< 1	≤ 2	4	100.0%	100.0%
Calcium	(mg / l as Ca)	< 150	≤ 300	4	100.0%	100.0%
Chloride	(mg / l as Cl)	< 200	≤ 600	4	100.0%	100.0%
Copper	(mg / l as Cu)	< 1	≤ 2	4	100.0%	100.0%
Fluoride	(mg / l as F)	< 1	≤ 1.5	4	100.0%	100.0%
Iron	(mg / l as Fe)	< 0.2	≤ 2	4	100.0%	100.0%
Magnesium	(mg / l as Mg)	< 70	≤ 100	4	100.0%	100.0%
Manganese	(mg / l as Mn)	< 0.1	≤ 1	4	100.0%	100.0%
Nitrate & Nitrite	(mg / l as N)	< 10	≤ 20	4	100.0%	100.0%
Potassium	(mg / l as K)	< 50	≤ 100	4	100.0%	100.0%
Sodium	(mg / l as Na)	< 200	≤ 400	4	100.0%	100.0%
Sulphate	(mg / l as SO4)	< 400	≤ 600	4	100.0%	100.0%
Zinc	(mg / l as Zn)	< 5	≤ 10	4	100.0%	100.0%
Microbiological						
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	minimum of 99% of the original and repeat/consecutive results shall be non-detected	12	91.7%	91.7%
Other Determinants as required by supply contract						
Free chlorine and monochloramine	(mg / l)	≥ 0.2 min 95% compliance		12	100.0%	

Notes :

(1) Specification date of effect : July 2006

(2) Guideline derived from SANS 241: 2005 operations alert and industry practices

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Parameter	Units of measure	Specification	No of samples	Mean - 3 SD	Mean - 1 SD	Mean	Mean + 1 SD	Mean + 3 SD	Standard Deviation
Chemical and Physical properties									
Colour	(mg / l as Pt)	< 20	4	5.00	5.00	5.00	5.00	5.00	0.00
Conductivity	(mS / m)	< 150	12	18.00	18.38	19.25	20.12	21.00	0.87
pH	(pH units)	≥ 5 to ≤ 9.5	12	7.84	7.90	7.97	8.03	8.10	0.07
Turbidity	(NTU)	< 1	12	0.16	0.17	0.20	0.23	0.25	0.03
Total Dissolved Solids	(mg / l)	< 1000	4	105.00	105.00	125.00	145.00	145.00	20.41
Hardness	(mg / l as CaCO ₃)	> 20 to < 200	4	68.00	68.00	72.25	77.00	77.00	4.92
Taste	(FTN)	< 5	4	1.00	1.00	1.00	1.00	1.00	0.00
Odour	(TON)	< 5	4	1.00	1.00	1.00	1.00	1.00	0.00
Organic Determinants									
Total Trihalomethanes	(ug / l)	< 200	4	48.34	48.93	51.92	54.91	55.62	2.99
Phenols as C ₆ H ₅ OH	(ug / l)	< 10	4	0.33	0.44	1.26	2.07	2.30	0.81
Dissolved Organic Carbon	(mg / l)	< 10	4	3.30	3.32	3.40	3.48	3.50	0.08
Micro Elements									
Antimony	(ug / l as Sb)	< 10	2	1.00	1.00	1.00	1.00	1.00	0.00
Arsenic	(ug / l as As)	< 10	2	1.00	1.00	1.00	1.00	1.00	0.00
Cadmium	(ug / l as Cd)	< 5	4	1.25	1.25	1.25	1.25	1.25	0.00
Chromium (Total)	(ug / l as Cr)	< 100	4	5.00	5.00	5.00	5.00	5.00	0.00
Cobalt	(ug / l as Co)	< 500	4	7.50	7.50	7.50	7.50	7.50	0.00
Cyanide (Recoverable)	(ug / l as CN)	< 50	4	5.00	5.00	5.00	5.00	5.00	0.00
Lead	(ug / l as Pb)	< 20	4	4.00	4.00	4.00	4.00	4.00	0.00
Mercury	(ug / l as Hg)	< 1	3	0.50	0.50	0.50	0.50	0.50	0.00
Nickel	(ug / l as Ni)	< 150	4	7.50	7.50	7.50	7.50	7.50	0.00
Selenium	(ug / l as Se)	< 20	2	1.00	1.00	1.00	1.00	1.00	0.00
Vanadium	(ug / l as V)	< 200	4	15.00	15.00	15.00	15.00	15.00	0.00
Macro Elements & Miscellaneous Determinants									
Aluminium	(mg / l as Al)	< 0.3	4	0.010	0.010	0.010	0.010	0.010	0.000
Ammonia	(mg / l as N)	< 1	4	0.122	0.171	0.275	0.350	0.350	0.104
Calcium	(mg / l as Ca)	< 150	4	16.000	16.000	16.750	17.707	18.000	0.957
Chloride	(mg / l as Cl)	< 200	4	10.000	10.250	10.750	11.000	11.000	0.500
Copper	(mg / l as Cu)	< 1	4	0.005	0.005	0.008	0.010	0.010	0.003
Fluoride	(mg / l as F)	< 1	4	0.170	0.170	0.178	0.187	0.190	0.010
Iron	(mg / l as Fe)	< 0.2	4	0.003	0.004	0.011	0.018	0.020	0.007
Magnesium	(mg / l as Mg)	< 70	4	6.900	6.900	7.375	7.800	7.800	0.492
Manganese	(mg / l as Mn)	< 0.1	4	0.002	0.002	0.002	0.002	0.002	0.000
Nitrate & Nitrite	(mg / l as N)	< 10	4	0.240	0.252	0.325	0.398	0.400	0.073
Potassium	(mg / l as K)	< 50	4	0.960	1.115	1.490	1.800	1.800	0.375
Sodium	(mg / l as Na)	< 200	4	7.200	7.573	9.125	10.677	11.000	1.552
Sulphate	(mg / l as SO ₄)	< 400	4	15.000	15.000	16.250	17.750	18.000	1.500
Zinc	(mg / l as Zn)	< 5	4	0.004	0.004	0.004	0.004	0.004	0.000
Microbiological									
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	12	0.0	0.0	0	0.4	0.9	0.3
Other Determinants as required by supply contract									
Free chlorine and monochloramine	(mg / l)	≥ 0.2 min 95% compliance	12	1.15	1.25	1.34	1.43	1.46	0.09
Notes :									
(1) Specification date of effect : July 2006									
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices									