

Johannesburg Metro Water Quality Report

22 June 2011 to 22 July 2011

Date generated : 01 August 2011

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	113	100.0%	100.0%
Conductivity	(mS / m)	< 150	≤ 370	309	100.0%	100.0%
pH	(pH units)	≥ 5 to ≤ 9.5	≥ 4 to ≤ 10	309	100.0%	100.0%
Turbidity	(NTU)	< 1	≤ 5	458	100.0%	100.0%
Total Dissolved Solids	(mg / l)	< 1000	≤ 2400	113	100.0%	100.0%
Taste	(FTN)	< 5	≤ 10	113	100.0%	100.0%
Odour	(TON)	< 5	≤ 10	113	100.0%	100.0%
Organic Determinants						
Total Trihalomethanes	(ug / l)	< 200	≤ 300	116	100.0%	100.0%
Phenols as C6H5OH	(ug / l)	< 10	≤ 70	64	100.0%	100.0%
Dissolved Organic Carbon	(mg / l)	< 10	≤ 20	116	100.0%	100.0%
Micro Elements						
Antimony	(ug / l as Sb)	< 10	≤ 50	114	100.0%	100.0%
Arsenic	(ug / l as As)	< 10	≤ 50	114	100.0%	100.0%
Cadmium	(ug / l as Cd)	< 5	≤ 10	117	100.0%	100.0%
Chromium (Total)	(ug / l as Cr)	< 100	≤ 500	117	100.0%	100.0%
Cobalt	(ug / l as Co)	< 500	≤ 1000	117	100.0%	100.0%
Cyanide (Recoverable)	(ug / l as CN)	< 50	≤ 70	113	100.0%	100.0%
Lead	(ug / l as Pb)	< 20	≤ 50	117	100.0%	100.0%
Mercury	(ug / l as Hg)	< 1	≤ 5	111	100.0%	100.0%
Nickel	(ug / l as Ni)	< 150	≤ 350	117	100.0%	100.0%
Selenium	(ug / l as Se)	< 20	≤ 50	114	100.0%	100.0%
Vanadium	(ug / l as V)	< 200	≤ 500	117	100.0%	100.0%
Macro Elements & Miscellaneous Determinants						
Aluminium	(mg / l as Al)	< 0.3	≤ 0.5	116	100.0%	100.0%
Ammonia	(mg / l as N)	< 1	≤ 2	117	100.0%	100.0%
Calcium	(mg / l as Ca)	< 150	≤ 300	117	100.0%	100.0%
Chloride	(mg / l as Cl)	< 200	≤ 600	70	100.0%	100.0%
Copper	(mg / l as Cu)	< 1	≤ 2	117	100.0%	100.0%
Fluoride	(mg / l as F)	< 1	≤ 1.5	70	100.0%	100.0%
Iron	(mg / l as Fe)	< 0.2	≤ 2	116	100.0%	100.0%
Magnesium	(mg / l as Mg)	< 70	≤ 100	117	100.0%	100.0%
Manganese	(mg / l as Mn)	< 0.1	≤ 1	117	100.0%	100.0%
Nitrate & Nitrite	(mg / l as N)	< 10	≤ 20	117	100.0%	100.0%
Potassium	(mg / l as K)	< 50	≤ 100	117	100.0%	100.0%
Sodium	(mg / l as Na)	< 200	≤ 400	117	100.0%	100.0%
Sulphate	(mg / l as SO ₄)	< 400	≤ 600	70	100.0%	100.0%
Zinc	(mg / l as Zn)	< 5	≤ 10	117	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	462	99.8%	99.8%
Other Determinants as required by supply contract						
Free chlorine and monochloramine	(mg / l)	≥ 0.2 min 95% compliance		462	97.0%	
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	113	5.00	5.00	5.04	5.26	5.72	0.23
Conductivity	(mS / m)	< 150	309	17.00	19.21	23.85	28.49	36.00	4.64
pH	(pH units)	≥ 5 to ≤ 9.5	309	7.07	7.38	7.67	7.96	8.54	0.29
Turbidity	(NTU)	< 1	458	0.13	0.23	0.29	0.36	0.49	0.07
Total Dissolved Solids	(mg / l)	< 1000	113	130.00	137.31	160.75	184.20	230.00	23.44
Hardness	(mg / l as CaCO ₃)	> 20 to < 200	117	51.00	62.42	81.35	100.28	130.00	18.93
Taste	(FTN)	< 5	113	1.00	1.00	1.00	1.00	1.00	0.00
Odour	(TON)	< 5	113	1.00	1.00	1.00	1.00	1.00	0.00
Organic Determinants									
Total Trihalomethanes	(ug / l)	< 200	116	22.14	48.80	67.48	86.15	123.50	18.67
Phenols as C ₆ H ₅ OH	(ug / l)	< 10	64	0.90	1.77	2.48	3.20	4.50	0.71
Dissolved Organic Carbon	(mg / l)	< 10	116	4.38	4.99	5.30	5.61	6.22	0.31
Micro Elements									
Antimony	(ug / l as Sb)	< 10	114	1.00	1.00	1.00	1.00	1.00	0.00
Arsenic	(ug / l as As)	< 10	114	1.00	1.00	1.18	1.65	2.58	0.47
Cadmium	(ug / l as Cd)	< 5	117	1.25	1.25	1.25	1.25	1.25	0.00
Chromium (Total)	(ug / l as Cr)	< 100	117	5.00	5.00	5.85	7.75	10.00	1.89
Cobalt	(ug / l as Co)	< 500	117	7.50	7.50	7.50	7.50	7.50	0.00
Cyanide (Recoverable)	(ug / l as CN)	< 50	113	5.00	5.00	5.00	5.00	5.00	0.00
Lead	(ug / l as Pb)	< 20	117	4.00	4.00	4.00	4.00	4.00	0.00
Mercury	(ug / l as Hg)	< 1	111	0.40	0.40	0.40	0.40	0.40	0.00
Nickel	(ug / l as Ni)	< 150	117	7.50	7.50	7.50	7.50	7.50	0.00
Selenium	(ug / l as Se)	< 20	114	1.00	1.00	1.00	1.00	1.00	0.00
Vanadium	(ug / l as V)	< 200	117	15.00	15.00	15.00	15.00	15.00	0.00
Macro Elements & Miscellaneous Determinants									
Aluminium	(mg / l as Al)	< 0.3	116	0.005	0.007	0.023	0.040	0.073	0.017
Ammonia	(mg / l as N)	< 1	117	0.122	0.122	0.233	0.363	0.540	0.130
Calcium	(mg / l as Ca)	< 150	117	13.000	15.847	24.060	32.273	45.000	8.213
Chloride	(mg / l as Cl)	< 200	70	9.300	10.649	11.354	12.060	13.000	0.706
Copper	(mg / l as Cu)	< 1	117	0.005	0.005	0.011	0.022	0.044	0.011
Fluoride	(mg / l as F)	< 1	70	0.140	0.166	0.179	0.192	0.210	0.013
Iron	(mg / l as Fe)	< 0.2	116	0.003	0.004	0.029	0.053	0.100	0.025
Magnesium	(mg / l as Mg)	< 70	117	2.800	3.347	5.195	7.043	9.900	1.848
Manganese	(mg / l as Mn)	< 0.1	117	0.002	0.002	0.003	0.007	0.010	0.003
Nitrate & Nitrite	(mg / l as N)	< 10	117	0.005	0.008	0.334	0.661	1.313	0.326
Potassium	(mg / l as K)	< 50	117	0.155	0.635	1.519	2.402	3.100	0.883
Sodium	(mg / l as Na)	< 200	117	4.700	6.227	7.262	8.296	10.000	1.034
Sulphate	(mg / l as SO ₄)	< 400	70	13.000	13.809	14.686	15.563	17.000	0.877
Zinc	(mg / l as Zn)	< 5	117	0.004	0.004	0.008	0.019	0.042	0.011
Microbiological									
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	462	0.0	0.0	0	0.0	0.1	0.0
Other Determinants as required by supply contract									
Free chlorine and monochloramine	(mg / l)	≥ 0.2 min 95% compliance	462	0.01	0.81	1.25	1.70	2.20	0.45
Notes :									
(1) Specification date of effect : July 2006									
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices									