

Midvaal Municipality 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	22	100.0%	100.0%
Conductivity	(mS / m)	< 150	≤ 370	135	100.0%	100.0%
pH	(pH units)	≥ 5 to ≤ 9.5	≥ 4 to ≤ 10	135	100.0%	100.0%
Turbidity	(NTU)	< 1	≤ 5	227	100.0%	100.0%
Total Dissolved Solids	(mg / l)	< 1000	≤ 2400	22	100.0%	100.0%
Taste	(FTN)	< 5	≤ 10	22	100.0%	100.0%
Odour	(TON)	< 5	≤ 10	22	100.0%	100.0%
Organic Determinants						
Total Trihalomethanes	(ug / l)	< 200	≤ 300	22	100.0%	100.0%
Phenols as C6H5OH	(ug / l)	< 10	≤ 70	12	100.0%	100.0%
Dissolved Organic Carbon	(mg / l)	< 10	≤ 20	22	100.0%	100.0%
Micro Elements						
Antimony	(ug / l as Sb)	< 10	≤ 50	26	100.0%	100.0%
Arsenic	(ug / l as As)	< 10	≤ 50	26	100.0%	100.0%
Cadmium	(ug / l as Cd)	< 5	≤ 10	22	100.0%	100.0%
Chromium (Total)	(ug / l as Cr)	< 100	≤ 500	22	100.0%	100.0%
Cobalt	(ug / l as Co)	< 500	≤ 1000	22	100.0%	100.0%
Cyanide (Recoverable)	(ug / l as CN)	< 50	≤ 70	22	100.0%	100.0%
Lead	(ug / l as Pb)	< 20	≤ 50	22	100.0%	100.0%
Mercury	(ug / l as Hg)	< 1	≤ 5	26	100.0%	100.0%
Nickel	(ug / l as Ni)	< 150	≤ 350	22	100.0%	100.0%
Selenium	(ug / l as Se)	< 20	≤ 50	26	100.0%	100.0%
Vanadium	(ug / l as V)	< 200	≤ 500	22	100.0%	100.0%
Macro Elements & Miscellaneous Determinants						
Aluminium	(mg / l as Al)	< 0.3	≤ 0.5	22	100.0%	100.0%
Ammonia	(mg / l as N)	< 1	≤ 2	22	100.0%	100.0%
Calcium	(mg / l as Ca)	< 150	≤ 300	22	100.0%	100.0%
Chloride	(mg / l as Cl)	< 200	≤ 600	13	100.0%	100.0%
Copper	(mg / l as Cu)	< 1	≤ 2	22	100.0%	100.0%
Fluoride	(mg / l as F)	< 1	≤ 1.5	13	100.0%	100.0%
Iron	(mg / l as Fe)	< 0.2	≤ 2	22	100.0%	100.0%
Magnesium	(mg / l as Mg)	< 70	≤ 100	22	100.0%	100.0%
Manganese	(mg / l as Mn)	< 0.1	≤ 1	22	100.0%	100.0%
Nitrate & Nitrite	(mg / l as N)	< 10	≤ 20	22	100.0%	100.0%
Potassium	(mg / l as K)	< 50	≤ 100	22	100.0%	100.0%
Sodium	(mg / l as Na)	< 200	≤ 400	22	100.0%	100.0%
Sulphate	(mg / l as SO4)	< 400	≤ 600	13	100.0%	100.0%
Zinc	(mg / l as Zn)	< 5	≤ 10	22	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	227	100.0%	100.0%
Other Determinants as required by supply contract						
Free chlorine and monochloramine	(mg / l)	≥ 0.2 min 95% compliance		227	93.4%	
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	22	5.00	5.00	5.05	5.26	5.69	0.21
Conductivity	(mS / m)	< 150	135	17.00	19.38	25.19	31.01	35.00	5.81
pH	(pH units)	≥ 5 to ≤ 9.5	135	7.09	7.40	7.77	8.14	8.55	0.37
Turbidity	(NTU)	< 1	227	0.16	0.23	0.30	0.37	0.47	0.07
Total Dissolved Solids	(mg / l)	< 1000	22	130.00	144.11	173.86	203.62	225.00	29.76
Hardness	(mg / l as CaCO ₃)	> 20 to < 200	22	51.00	68.04	93.86	119.69	140.00	25.82
Taste	(FTN)	< 5	22	1.00	1.00	1.00	1.00	1.00	0.00
Odour	(TON)	< 5	22	1.00	1.00	1.00	1.00	1.00	0.00
Organic Determinants									
Total Trihalomethanes	(ug / l)	< 200	22	22.14	35.60	71.24	106.88	156.57	35.64
Phenols as C ₆ H ₅ OH	(ug / l)	< 10	12	0.90	1.58	2.29	3.00	3.30	0.71
Dissolved Organic Carbon	(mg / l)	< 10	22	4.90	5.04	5.29	5.54	5.80	0.25
Micro Elements									
Antimony	(ug / l as Sb)	< 10	26	1.00	1.00	1.00	1.00	1.00	0.00
Arsenic	(ug / l as As)	< 10	26	1.00	1.00	1.23	1.79	2.80	0.56
Cadmium	(ug / l as Cd)	< 5	22	1.25	1.25	1.25	1.25	1.25	0.00
Chromium (Total)	(ug / l as Cr)	< 100	22	5.00	5.00	5.91	7.88	10.00	1.97
Cobalt	(ug / l as Co)	< 500	22	7.50	7.50	7.50	7.50	7.50	0.00
Cyanide (Recoverable)	(ug / l as CN)	< 50	22	5.00	5.00	5.00	5.00	5.00	0.00
Lead	(ug / l as Pb)	< 20	22	4.00	4.00	4.00	4.00	4.00	0.00
Mercury	(ug / l as Hg)	< 1	26	0.40	0.40	0.40	0.40	0.40	0.00
Nickel	(ug / l as Ni)	< 150	22	7.50	7.50	7.50	7.50	7.50	0.00
Selenium	(ug / l as Se)	< 20	26	1.00	1.00	1.00	1.00	1.00	0.00
Vanadium	(ug / l as V)	< 200	22	15.00	15.00	15.00	15.00	15.00	0.00
Macro Elements & Miscellaneous Determinants									
Aluminium	(mg / l as Al)	< 0.3	22	0.005	0.005	0.012	0.023	0.040	0.011
Ammonia	(mg / l as N)	< 1	22	0.122	0.122	0.122	0.122	0.122	0.000
Calcium	(mg / l as Ca)	< 150	22	14.000	18.977	29.545	40.114	44.000	10.568
Chloride	(mg / l as Cl)	< 200	13	9.300	9.729	10.677	11.625	12.000	0.948
Copper	(mg / l as Cu)	< 1	22	0.005	0.005	0.006	0.008	0.010	0.002
Fluoride	(mg / l as F)	< 1	13	0.160	0.165	0.185	0.204	0.240	0.020
Iron	(mg / l as Fe)	< 0.2	22	0.003	0.003	0.030	0.059	0.100	0.029
Magnesium	(mg / l as Mg)	< 70	22	2.800	3.122	4.932	6.742	9.400	1.810
Manganese	(mg / l as Mn)	< 0.1	22	0.002	0.002	0.003	0.006	0.010	0.003
Nitrate & Nitrite	(mg / l as N)	< 10	22	0.005	0.014	0.219	0.425	0.470	0.206
Potassium	(mg / l as K)	< 50	22	0.155	0.589	1.463	2.336	3.100	0.874
Sodium	(mg / l as Na)	< 200	22	4.700	6.143	7.323	8.503	9.300	1.180
Sulphate	(mg / l as SO ₄)	< 400	13	14.000	14.000	14.769	15.782	17.000	1.013
Zinc	(mg / l as Zn)	< 5	22	0.004	0.004	0.010	0.028	0.064	0.018
Microbiological									
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	227	0.0	0.0	0	0.0	0.0	0.0
Other Determinants as required by supply contract									
Free chlorine and monochloramine	(mg / l)	≥ 0.2 min 95% compliance	227	0.01	0.28	0.71	1.13	1.99	0.43
Notes :									
(1) Specification date of effect : July 2006									
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices									