

Emfuleni 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	13	100.0%	100.0%
Conductivity	(mS / m)	< 150	≤ 370	68	100.0%	100.0%
pH	(pH units)	≥ 5 to ≤ 9.5	≥ 4 to ≤ 10	68	100.0%	100.0%
Turbidity	(NTU)	< 1	≤ 5	68	100.0%	100.0%
Total Dissolved Solids	(mg / l)	< 1000	≤ 2400	13	100.0%	100.0%
Taste	(FTN)	< 5	≤ 10	13	100.0%	100.0%
Odour	(TON)	< 5	≤ 10	13	100.0%	100.0%
Organic Determinants						
Total Trihalomethanes	(ug / l)	< 200	≤ 300	13	100.0%	100.0%
Phenols as C6H5OH	(ug / l)	< 10	≤ 70	8	100.0%	100.0%
Dissolved Organic Carbon	(mg / l)	< 10	≤ 20	13	100.0%	100.0%
Micro Elements						
Antimony	(ug / l as Sb)	< 10	≤ 50	13	100.0%	100.0%
Arsenic	(ug / l as As)	< 10	≤ 50	13	100.0%	100.0%
Cadmium	(ug / l as Cd)	< 5	≤ 10	13	100.0%	100.0%
Chromium (Total)	(ug / l as Cr)	< 100	≤ 500	13	100.0%	100.0%
Cobalt	(ug / l as Co)	< 500	≤ 1000	13	100.0%	100.0%
Cyanide (Recoverable)	(ug / l as CN)	< 50	≤ 70	12	100.0%	100.0%
Lead	(ug / l as Pb)	< 20	≤ 50	13	100.0%	100.0%
Mercury	(ug / l as Hg)	< 1	≤ 5	13	100.0%	100.0%
Nickel	(ug / l as Ni)	< 150	≤ 350	13	100.0%	100.0%
Selenium	(ug / l as Se)	< 20	≤ 50	13	100.0%	100.0%
Vanadium	(ug / l as V)	< 200	≤ 500	13	100.0%	100.0%
Macro Elements & Miscellaneous Determinants						
Aluminium	(mg / l as Al)	< 0.3	≤ 0.5	13	100.0%	100.0%
Ammonia	(mg / l as N)	< 1	≤ 2	13	100.0%	100.0%
Calcium	(mg / l as Ca)	< 150	≤ 300	13	100.0%	100.0%
Chloride	(mg / l as Cl)	< 200	≤ 600	9	100.0%	100.0%
Copper	(mg / l as Cu)	< 1	≤ 2	13	100.0%	100.0%
Fluoride	(mg / l as F)	< 1	≤ 1.5	9	100.0%	100.0%
Iron	(mg / l as Fe)	< 0.2	≤ 2	13	100.0%	100.0%
Magnesium	(mg / l as Mg)	< 70	≤ 100	13	100.0%	100.0%
Manganese	(mg / l as Mn)	< 0.1	≤ 1	13	100.0%	100.0%
Nitrate & Nitrite	(mg / l as N)	< 10	≤ 20	13	100.0%	100.0%
Potassium	(mg / l as K)	< 50	≤ 100	13	100.0%	100.0%
Sodium	(mg / l as Na)	< 200	≤ 400	13	100.0%	100.0%
Sulphate	(mg / l as SO4)	< 400	≤ 600	9	100.0%	100.0%
Zinc	(mg / l as Zn)	< 5	≤ 10	13	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	68	100.0%	100.0%
Other Determinants as required by supply contract						
Free chlorine and monochloramine	(mg / l)	≥ 0.2 min 95% compliance		68	92.6%	

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	13	5.00	5.00	5.08	5.35	5.91	0.28
Conductivity	(mS / m)	< 150	68	18.00	22.33	27.99	33.64	36.00	5.65
pH	(pH units)	≥ 5 to ≤ 9.5	68	7.16	7.53	7.80	8.07	8.21	0.27
Turbidity	(NTU)	< 1	68	0.21	0.23	0.31	0.38	0.43	0.07
Total Dissolved Solids	(mg / l)	< 1000	13	130.00	138.67	172.31	205.95	225.00	33.64
Hardness	(mg / l as CaCO ₃)	> 20 to < 200	13	51.00	62.86	88.54	114.22	125.00	25.68
Taste	(FTN)	< 5	13	1.00	1.00	1.00	1.00	1.00	0.00
Odour	(TON)	< 5	13	1.00	1.00	1.00	1.00	1.00	0.00
Organic Determinants									
Total Trihalomethanes	(ug / l)	< 200	13	22.14	28.01	50.03	72.04	84.01	22.02
Phenols as C ₆ H ₅ OH	(ug / l)	< 10	8	0.90	1.29	2.23	3.16	3.30	0.93
Dissolved Organic Carbon	(mg / l)	< 10	13	4.90	5.05	5.38	5.72	6.20	0.34
Micro Elements									
Antimony	(ug / l as Sb)	< 10	13	1.00	1.00	1.00	1.00	1.00	0.00
Arsenic	(ug / l as As)	< 10	13	1.00	1.00	1.42	2.23	3.00	0.81
Cadmium	(ug / l as Cd)	< 5	13	1.25	1.25	1.25	1.25	1.25	0.00
Chromium (Total)	(ug / l as Cr)	< 100	13	5.00	5.00	5.38	6.77	9.54	1.39
Cobalt	(ug / l as Co)	< 500	13	7.50	7.50	7.50	7.50	7.50	0.00
Cyanide (Recoverable)	(ug / l as CN)	< 50	12	5.00	5.00	5.00	5.00	5.00	0.00
Lead	(ug / l as Pb)	< 20	13	4.00	4.00	4.00	4.00	4.00	0.00
Mercury	(ug / l as Hg)	< 1	13	0.40	0.40	0.40	0.40	0.40	0.00
Nickel	(ug / l as Ni)	< 150	13	7.50	7.50	7.50	7.50	7.50	0.00
Selenium	(ug / l as Se)	< 20	13	1.00	1.00	1.00	1.00	1.00	0.00
Vanadium	(ug / l as V)	< 200	13	15.00	15.00	15.00	15.00	15.00	0.00
Macro Elements & Miscellaneous Determinants									
Aluminium	(mg / l as Al)	< 0.3	13	0.005	0.005	0.009	0.017	0.030	0.008
Ammonia	(mg / l as N)	< 1	13	0.122	0.122	0.122	0.122	0.122	0.000
Calcium	(mg / l as Ca)	< 150	13	14.000	16.336	27.846	39.356	42.000	11.510
Chloride	(mg / l as Cl)	< 200	9	9.300	9.644	10.644	11.645	12.000	1.000
Copper	(mg / l as Cu)	< 1	13	0.005	0.005	0.007	0.009	0.010	0.002
Fluoride	(mg / l as F)	< 1	9	0.160	0.165	0.179	0.193	0.200	0.014
Iron	(mg / l as Fe)	< 0.2	13	0.003	0.003	0.035	0.071	0.100	0.036
Magnesium	(mg / l as Mg)	< 70	13	2.800	2.891	4.615	6.340	9.400	1.724
Manganese	(mg / l as Mn)	< 0.1	13	0.002	0.002	0.004	0.008	0.010	0.004
Nitrate & Nitrite	(mg / l as N)	< 10	13	0.005	0.073	0.286	0.499	0.500	0.213
Potassium	(mg / l as K)	< 50	13	0.155	0.446	1.286	2.126	2.200	0.840
Sodium	(mg / l as Na)	< 200	13	5.600	6.318	7.500	8.682	9.900	1.182
Sulphate	(mg / l as SO ₄)	< 400	9	14.000	14.000	15.000	16.118	17.000	1.118
Zinc	(mg / l as Zn)	< 5	13	0.004	0.004	0.005	0.007	0.010	0.002
Microbiological									
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	68	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	68	0.00	0.31	0.69	1.07	1.83	0.38
Notes :									
(1) Specification date of effect : July 2006									
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices									