

## Merafong 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			
<b>SPECIFICATIONS</b>						
<b>Chemical and Physical properties</b>						
Colour	(mg / l as Pt)	< 20	≤ 50	21	100.0%	100.0%
Conductivity	(mS / m)	< 150	≤ 370	58	100.0%	100.0%
pH	(pH units)	≥ 5 to ≤ 9.5	≥ 4 to ≤ 10	58	100.0%	100.0%
Turbidity	(NTU)	< 1	≤ 5	126	100.0%	100.0%
Total Dissolved Solids	(mg / l)	< 1000	≤ 2400	21	100.0%	100.0%
Taste	(FTN)	< 5	≤ 10	20	100.0%	100.0%
Odour	(TON)	< 5	≤ 10	20	100.0%	100.0%
<b>Organic Determinants</b>						
Total Trihalomethanes	(ug / l)	< 200	≤ 300	21	100.0%	100.0%
Phenols as C6H5OH	(ug / l)	< 10	≤ 70	14	100.0%	100.0%
Dissolved Organic Carbon	(mg / l)	< 10	≤ 20	21	100.0%	100.0%
<b>Micro Elements</b>						
Antimony	(ug / l as Sb)	< 10	≤ 50	21	100.0%	100.0%
Arsenic	(ug / l as As)	< 10	≤ 50	21	100.0%	100.0%
Cadmium	(ug / l as Cd)	< 5	≤ 10	21	100.0%	100.0%
Chromium (Total)	(ug / l as Cr)	< 100	≤ 500	21	100.0%	100.0%
Cobalt	(ug / l as Co)	< 500	≤ 1000	21	100.0%	100.0%
Cyanide (Recoverable)	(ug / l as CN)	< 50	≤ 70	21	100.0%	100.0%
Lead	(ug / l as Pb)	< 20	≤ 50	21	100.0%	100.0%
Mercury	(ug / l as Hg)	< 1	≤ 5	21	100.0%	100.0%
Nickel	(ug / l as Ni)	< 150	≤ 350	21	100.0%	100.0%
Selenium	(ug / l as Se)	< 20	≤ 50	21	100.0%	100.0%
Vanadium	(ug / l as V)	< 200	≤ 500	21	100.0%	100.0%
<b>Macro Elements &amp; Miscellaneous Determinants</b>						
Aluminium	(mg / l as Al)	< 0.3	≤ 0.5	21	100.0%	100.0%
Ammonia	(mg / l as N)	< 1	≤ 2	21	100.0%	100.0%
Calcium	(mg / l as Ca)	< 150	≤ 300	21	100.0%	100.0%
Chloride	(mg / l as Cl)	< 200	≤ 600	14	100.0%	100.0%
Copper	(mg / l as Cu)	< 1	≤ 2	21	100.0%	100.0%
Fluoride	(mg / l as F)	< 1	≤ 1.5	14	100.0%	100.0%
Iron	(mg / l as Fe)	< 0.2	≤ 2	21	100.0%	100.0%
Magnesium	(mg / l as Mg)	< 70	≤ 100	21	100.0%	100.0%
Manganese	(mg / l as Mn)	< 0.1	≤ 1	21	100.0%	100.0%
Nitrate & Nitrite	(mg / l as N)	< 10	≤ 20	21	100.0%	100.0%
Potassium	(mg / l as K)	< 50	≤ 100	21	100.0%	100.0%
Sodium	(mg / l as Na)	< 200	≤ 400	21	100.0%	100.0%
Sulphate	(mg / l as SO4)	< 400	≤ 600	14	100.0%	100.0%
Zinc	( mg / l as Zn)	< 5	≤ 10	21	100.0%	100.0%
<b>Microbiological</b>						
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	130	100.0%	100.0%
<b>Other Determinants as required by supply contract</b>						
Free chlorine and monochloramine	(mg / l)	≥ 0.2 min 95% compliance		130	94.6%	

**Notes :**

(1) Specification date of effect : July 2006

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

## Merafong Municipality Water Quality Report

22 June 2011 to 22 July 2011

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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
<b>Chemical and Physical properties</b>									
Colour	(mg / l as Pt)	< 20	21	5.00	5.00	5.00	5.00	5.00	0.00
Conductivity	(mS / m)	< 150	58	17.00	20.00	24.83	29.66	35.00	4.83
pH	(pH units)	≥ 5 to ≤ 9.5	58	7.27	7.45	7.63	7.81	8.00	0.18
Turbidity	(NTU)	< 1	126	0.20	0.24	0.31	0.37	0.44	0.07
Total Dissolved Solids	(mg / l)	< 1000	21	140.00	159.92	178.57	195.00	195.00	18.65
Hardness	(mg / l as CaCO <sub>3</sub> )	> 20 to < 200	21	69.00	81.78	94.19	106.60	115.00	12.41
Taste	(FTN)	< 5	20	1.00	1.00	1.00	1.00	1.00	0.00
Odour	(TON)	< 5	20	1.00	1.00	1.00	1.00	1.00	0.00
<b>Organic Determinants</b>									
Total Trihalomethanes	(ug / l)	< 200	21	42.43	51.89	64.72	77.56	88.07	12.84
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(ug / l)	< 10	14	1.30	1.59	2.34	3.08	4.10	0.75
Dissolved Organic Carbon	(mg / l)	< 10	21	5.00	5.10	5.28	5.46	5.70	0.18
<b>Micro Elements</b>									
Antimony	(ug / l as Sb)	< 10	21	1.00	1.00	1.00	1.00	1.00	0.00
Arsenic	(ug / l as As)	< 10	21	1.00	1.00	1.10	1.42	2.05	0.32
Cadmium	(ug / l as Cd)	< 5	21	1.25	1.25	1.25	1.25	1.25	0.00
Chromium (Total)	(ug / l as Cr)	< 100	21	5.00	5.00	5.48	6.98	9.99	1.50
Cobalt	(ug / l as Co)	< 500	21	7.50	7.50	7.50	7.50	7.50	0.00
Cyanide (Recoverable)	(ug / l as CN)	< 50	21	5.00	5.00	5.29	6.60	9.21	1.31
Lead	(ug / l as Pb)	< 20	21	4.00	4.00	4.00	4.00	4.00	0.00
Mercury	(ug / l as Hg)	< 1	21	0.40	0.40	0.40	0.40	0.40	0.00
Nickel	(ug / l as Ni)	< 150	21	7.50	7.50	7.50	7.50	7.50	0.00
Selenium	(ug / l as Se)	< 20	21	1.00	1.00	1.00	1.00	1.00	0.00
Vanadium	(ug / l as V)	< 200	21	15.00	15.00	15.00	15.00	15.00	0.00
<b>Macro Elements &amp; Miscellaneous Determinants</b>									
Aluminium	(mg / l as Al)	< 0.3	21	0.005	0.005	0.009	0.013	0.020	0.004
Ammonia	(mg / l as N)	< 1	21	0.122	0.122	0.181	0.331	0.630	0.150
Calcium	(mg / l as Ca)	< 150	21	16.000	23.292	30.000	36.708	39.000	6.708
Chloride	(mg / l as Cl)	< 200	14	11.000	11.058	11.571	12.000	12.000	0.514
Copper	(mg / l as Cu)	< 1	21	0.005	0.006	0.010	0.015	0.020	0.005
Fluoride	(mg / l as F)	< 1	14	0.160	0.164	0.174	0.184	0.190	0.010
Iron	(mg / l as Fe)	< 0.2	21	0.003	0.011	0.036	0.062	0.110	0.025
Magnesium	(mg / l as Mg)	< 70	21	3.500	3.500	4.586	6.356	9.800	1.770
Manganese	(mg / l as Mn)	< 0.1	21	0.002	0.002	0.002	0.005	0.010	0.003
Nitrate & Nitrite	(mg / l as N)	< 10	21	0.020	0.055	0.473	0.891	1.610	0.418
Potassium	(mg / l as K)	< 50	21	0.155	0.557	1.514	2.470	3.000	0.957
Sodium	(mg / l as Na)	< 200	21	6.200	6.625	7.548	8.470	8.600	0.922
Sulphate	(mg / l as SO <sub>4</sub> )	< 400	14	14.000	14.155	15.071	15.988	16.000	0.917
Zinc	( mg / l as Zn)	< 5	21	0.004	0.004	0.015	0.039	0.070	0.023
<b>Microbiological</b>									
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	130	0.0	0.0	0	0.0	0.0	0.0
<b>Other Determinants as required by supply contract</b>									
Free chlorine and monochloramine	(mg / l)	≥ 0.2 min 95% compliance	130	0.01	0.46	0.95	1.44	1.73	0.49
Notes :									
(1) Specification date of effect : July 2006									
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices									