



REPORTS FOR MERAUFONG MUNICIPALITY

21 NOVEMBER 2015 TO 22 DECEMBER 2015

DATE GENERATED : 05 JANUARY 2016

Merafong Municipality Water Quality Report

21 November 2015 to 22 December 2015

Date generated : 05 January 2016

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	32	100.0%	100.0%
Conductivity	(mS / m)	< 150	≤ 370	37	100.0%	100.0%
pH	(pH units)	≥ 5 to ≤ 9.5	≥ 4 to ≤ 10	37	100.0%	100.0%
Turbidity	(NTU)	< 1	≤ 5	37	100.0%	100.0%
Total Dissolved Solids	(mg / l)	< 1000	≤ 2400	37	100.0%	100.0%
Taste	(FTN)	< 5	≤ 10	32	100.0%	100.0%
Odour	(TON)	< 5	≤ 10	32	100.0%	100.0%
Organic Determinants						
Total Trihalomethanes	(ug / l)	< 200	≤ 300	32	100.0%	100.0%
Phenols as C6H5OH	(ug / l)	< 10	≤ 70	22	100.0%	100.0%
Dissolved Organic Carbon	(mg / l)	< 10	≤ 20	32	100.0%	100.0%
Micro Elements						
Antimony	(ug / l as Sb)	< 10	≤ 50	32	100.0%	100.0%
Arsenic	(ug / l as As)	< 10	≤ 50	32	100.0%	100.0%
Cadmium	(ug / l as Cd)	< 5	≤ 10	32	100.0%	100.0%
Chromium (Total)	(ug / l as Cr)	< 100	≤ 500	32	100.0%	100.0%
Cobalt	(ug / l as Co)	< 500	≤ 1000	32	100.0%	100.0%
Cyanide (Recoverable)	(ug / l as CN)	< 50	≤ 70	32	100.0%	100.0%
Lead	(ug / l as Pb)	< 20	≤ 50	32	100.0%	100.0%
Mercury	(ug / l as Hg)	< 1	≤ 5	32	100.0%	100.0%
Nickel	(ug / l as Ni)	< 150	≤ 350	32	100.0%	100.0%
Selenium	(ug / l as Se)	< 20	≤ 50	32	100.0%	100.0%
Vanadium	(ug / l as V)	< 200	≤ 500	32	100.0%	100.0%
Macro Elements & Miscellaneous Determinants						
Aluminium	(mg / l as Al)	< 0.3	≤ 0.5	32	100.0%	100.0%
Ammonia	(mg / l as N)	< 1	≤ 2	37	100.0%	100.0%
Calcium	(mg / l as Ca)	< 150	≤ 300	32	100.0%	100.0%
Chloride	(mg / l as Cl)	< 200	≤ 600	32	100.0%	100.0%
Copper	(mg / l as Cu)	< 1	≤ 2	32	100.0%	100.0%
Fluoride	(mg / l as F)	< 1	≤ 1.5	32	100.0%	100.0%
Iron	(mg / l as Fe)	< 0.2	≤ 2	32	100.0%	100.0%
Magnesium	(mg / l as Mg)	< 70	≤ 100	32	100.0%	100.0%
Manganese	(mg / l as Mn)	< 0.1	≤ 1	32	100.0%	100.0%
Nitrate & Nitrite	(mg / l as N)	< 10	≤ 20	37	100.0%	100.0%
Potassium	(mg / l as K)	< 50	≤ 100	32	100.0%	100.0%
Sodium	(mg / l as Na)	< 200	≤ 400	32	100.0%	100.0%
Sulphate	(mg / l as SO ₄)	< 400	≤ 600	32	100.0%	100.0%
Zinc	(mg / l as Zn)	< 5	≤ 10	32	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	37	100.0%	100.0%
Other Determinants as required by supply contract (3),(4)						
Free chlorine and monochloramine	(mg / l)	Chloraminated system: ≥ 0.1 min 95% compliance; Chlorinated system: ≥ 0.2 min 95% compliance		37	100.0%	

Notes :

- (1) Specification date of effect : July 2006
- (2) Guideline derived from SANS 241: 2005 operations alert and industry practices
- (3) Compliance for Free and monochloramine is against 0.2 mg/l for areas in the chlorinated system
- (4) Compliance for Free and monochloramine is against 0.1 mg/l for areas in the chloraminated system after 30 June 2014
- (5) Compliance for Standard Plate Count is against 100 cfu per 1ml before 30 June 2014 and 500 cfu per 1ml after 30 June 2014 mg/l for areas in the chloraminated system

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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	32	5.00	5.00	5.03	5.21	5.56	0.18
Conductivity	(mS / m)	< 150	37	19.00	19.45	20.78	22.12	23.00	1.34
pH	(pH units)	≥ 5 to ≤ 9.5	37	7.64	7.83	7.97	8.12	8.16	0.14
Turbidity	(NTU)	< 1	37	0.13	0.16	0.25	0.33	0.41	0.08
Total Dissolved Solids	(mg / l)	< 1000	37	135.00	136.75	144.46	152.17	160.00	7.71
Hardness	(mg / l as CaCO ₃)	> 20 to < 200	32	62.39	67.90	70.66	73.41	76.00	2.75
Taste	(FTN)	< 5	32	1.00	1.00	1.00	1.00	1.00	0.00
Odour	(TON)	< 5	32	1.00	1.00	1.00	1.00	1.00	0.00
Organic Determinants									
Total Trihalomethanes	(ug / l)	< 200	32	41.00	46.58	49.47	52.35	54.00	2.88
Phenols as C ₆ H ₅ OH	(ug / l)	< 10	22	2.50	2.50	2.50	2.50	2.50	0.00
Dissolved Organic Carbon	(mg / l)	< 10	32	3.50	3.57	3.80	4.02	4.20	0.23
Micro Elements									
Antimony	(ug / l as Sb)	< 10	32	0.25	0.25	0.25	0.25	0.25	0.00
Arsenic	(ug / l as As)	< 10	32	0.05	0.23	0.44	0.64	0.89	0.21
Cadmium	(ug / l as Cd)	< 5	32	1.25	1.25	1.25	1.25	1.25	0.00
Chromium (Total)	(ug / l as Cr)	< 100	32	7.50	7.50	7.50	7.50	7.50	0.00
Cobalt	(ug / l as Co)	< 500	32	5.00	5.00	5.00	5.00	5.00	0.00
Cyanide (Recoverable)	(ug / l as CN)	< 50	32	2.50	2.50	1.00	2.50	2.50	0.00
Lead	(ug / l as Pb)	< 20	32	0.10	0.10	0.13	0.31	0.66	0.18
Mercury	(ug / l as Hg)	< 1	32	0.40	0.40	0.40	0.40	0.40	0.00
Nickel	(ug / l as Ni)	< 150	32	5.00	5.00	5.00	5.00	5.00	0.00
Selenium	(ug / l as Se)	< 20	32	0.25	1.36	3.15	4.93	5.70	1.78
Vanadium	(ug / l as V)	< 200	32	5.00	5.00	5.00	5.00	5.00	0.00
Macro Elements & Miscellaneous Determinants									
Aluminium	(mg / l as Al)	< 0.3	32	0.013	0.013	0.013	0.017	0.025	0.004
Ammonia	(mg / l as N)	< 1	37	0.050	0.081	0.210	0.339	0.473	0.129
Calcium	(mg / l as Ca)	< 150	32	16.000	17.303	18.063	18.822	20.000	0.759
Chloride	(mg / l as Cl)	< 200	32	9.500	10.464	11.203	11.942	12.000	0.739
Copper	(mg / l as Cu)	< 1	32	0.005	0.005	0.008	0.012	0.020	0.004
Fluoride	(mg / l as F)	< 1	32	0.075	0.118	0.165	0.213	0.240	0.047
Iron	(mg / l as Fe)	< 0.2	32	0.003	0.005	0.011	0.016	0.023	0.005
Magnesium	(mg / l as Mg)	< 70	32	6.335	7.020	7.363	7.705	7.900	0.342
Manganese	(mg / l as Mn)	< 0.1	32	0.005	0.005	0.005	0.005	0.005	0.000
Nitrate & Nitrite	(mg / l as N)	< 10	37	0.050	0.099	0.203	0.308	0.516	0.104
Potassium	(mg / l as K)	< 50	32	2.400	2.623	2.766	2.908	3.000	0.143
Sodium	(mg / l as Na)	< 200	32	8.900	9.588	10.281	10.975	11.000	0.693
Sulphate	(mg / l as SO ₄)	< 400	32	12.000	12.082	12.875	13.668	15.000	0.793
Zinc	(mg / l as Zn)	< 5	32	0.008	0.008	0.008	0.011	0.016	0.002
Microbiological									
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	37	0.0	0.0	0.0	0.0	0.0	0.0
Other Determinants as required by supply contract (3),(4)									
Free chlorine and monochloramine	(mg / l)	Chloraminated system: ≥ 0.1 min 95% compliance; Chlorinated system: ≥ 0.2 min 95% compliance	37	0.70	0.89	1.26	1.62	1.97	0.37
Notes :									
(1) Specification date of effect : July 2006									
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices									