



REPORTS FOR GOVAN MBEKI LOCAL MUNICIPALITY

21 NOVEMBER 2015 TO 22 DECEMBER 2015

DATE GENERATED : 05 JANUARY 2016

Govan Mbeki Local 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	46	100.0%	100.0%
Conductivity	(mS / m)	< 150	≤ 370	49	100.0%	100.0%
pH	(pH units)	≥ 5 to ≤ 9.5	≥ 4 to ≤ 10	49	100.0%	100.0%
Turbidity	(NTU)	< 1	≤ 5	49	100.0%	100.0%
Total Dissolved Solids	(mg / l)	< 1000	≤ 2400	49	100.0%	100.0%
Taste	(FTN)	< 5	≤ 10	46	100.0%	100.0%
Odour	(TON)	< 5	≤ 10	46	100.0%	100.0%
Organic Determinants						
Total Trihalomethanes	(ug / l)	< 200	≤ 300	46	100.0%	100.0%
Phenols as C6H5OH	(ug / l)	< 10	≤ 70	26	100.0%	100.0%
Dissolved Organic Carbon	(mg / l)	< 10	≤ 20	46	100.0%	100.0%
Micro Elements						
Antimony	(ug / l as Sb)	< 10	≤ 50	46	100.0%	100.0%
Arsenic	(ug / l as As)	< 10	≤ 50	46	100.0%	100.0%
Cadmium	(ug / l as Cd)	< 5	≤ 10	46	100.0%	100.0%
Chromium (Total)	(ug / l as Cr)	< 100	≤ 500	46	100.0%	100.0%
Cobalt	(ug / l as Co)	< 500	≤ 1000	46	100.0%	100.0%
Cyanide (Recoverable)	(ug / l as CN)	< 50	≤ 70	46	100.0%	100.0%
Lead	(ug / l as Pb)	< 20	≤ 50	46	100.0%	100.0%
Mercury	(ug / l as Hg)	< 1	≤ 5	46	100.0%	100.0%
Nickel	(ug / l as Ni)	< 150	≤ 350	46	100.0%	100.0%
Selenium	(ug / l as Se)	< 20	≤ 50	46	100.0%	100.0%
Vanadium	(ug / l as V)	< 200	≤ 500	46	100.0%	100.0%
Macro Elements & Miscellaneous Determinants						
Aluminium	(mg / l as Al)	< 0.3	≤ 0.5	46	100.0%	100.0%
Ammonia	(mg / l as N)	< 1	≤ 2	49	100.0%	100.0%
Calcium	(mg / l as Ca)	< 150	≤ 300	46	100.0%	100.0%
Chloride	(mg / l as Cl)	< 200	≤ 600	46	100.0%	100.0%
Copper	(mg / l as Cu)	< 1	≤ 2	46	100.0%	100.0%
Fluoride	(mg / l as F)	< 1	≤ 1.5	46	100.0%	100.0%
Iron	(mg / l as Fe)	< 0.2	≤ 2	46	100.0%	100.0%
Magnesium	(mg / l as Mg)	< 70	≤ 100	46	100.0%	100.0%
Manganese	(mg / l as Mn)	< 0.1	≤ 1	46	100.0%	100.0%
Nitrate & Nitrite	(mg / l as N)	< 10	≤ 20	49	100.0%	100.0%
Potassium	(mg / l as K)	< 50	≤ 100	46	100.0%	100.0%
Sodium	(mg / l as Na)	< 200	≤ 400	46	100.0%	100.0%
Sulphate	(mg / l as SO4)	< 400	≤ 600	46	100.0%	100.0%
Zinc	(mg / l as Zn)	< 5	≤ 10	46	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	49	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		49	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	46	5.00	5.00	5.02	5.17	5.46	0.15
Conductivity	(mS / m)	< 150	49	19.00	20.33	21.67	23.02	25.71	1.34
pH	(pH units)	≥ 5 to ≤ 9.5	49	7.66	7.88	7.99	8.10	8.15	0.11
Turbidity	(NTU)	< 1	49	0.13	0.23	0.30	0.38	0.44	0.08
Total Dissolved Solids	(mg / l)	< 1000	49	135.00	141.01	148.98	156.95	172.89	7.97
Hardness	(mg / l as CaCO ₃)	> 20 to < 200	46	65.00	68.69	72.96	77.22	82.00	4.26
Taste	(FTN)	< 5	46	1.00	1.00	1.00	1.00	1.00	0.00
Odour	(TON)	< 5	46	1.00	1.00	1.00	1.00	1.00	0.00
Organic Determinants									
Total Trihalomethanes	(ug / l)	< 200	46	32.49	44.21	50.07	55.92	67.64	5.86
Phenols as C ₆ H ₅ OH	(ug / l)	< 10	26	2.50	2.50	2.50	2.50	2.50	0.00
Dissolved Organic Carbon	(mg / l)	< 10	46	3.20	3.60	3.95	4.31	5.02	0.36
Micro Elements									
Antimony	(ug / l as Sb)	< 10	46	0.25	0.25	0.26	0.30	0.38	0.04
Arsenic	(ug / l as As)	< 10	46	0.05	0.22	0.46	0.70	0.83	0.24
Cadmium	(ug / l as Cd)	< 5	46	1.25	1.25	1.25	1.25	1.25	0.00
Chromium (Total)	(ug / l as Cr)	< 100	46	7.50	7.50	7.50	7.50	7.50	0.00
Cobalt	(ug / l as Co)	< 500	46	5.00	5.00	5.00	5.00	5.00	0.00
Cyanide (Recoverable)	(ug / l as CN)	< 50	46	2.50	2.50	1.00	3.35	4.76	0.70
Lead	(ug / l as Pb)	< 20	46	0.10	0.10	0.10	0.10	0.10	0.00
Mercury	(ug / l as Hg)	< 1	46	0.40	0.40	0.40	0.40	0.40	0.00
Nickel	(ug / l as Ni)	< 150	46	5.00	5.00	5.00	5.00	5.00	0.00
Selenium	(ug / l as Se)	< 20	46	0.96	1.25	3.09	4.93	7.90	1.84
Vanadium	(ug / l as V)	< 200	46	5.00	5.00	5.00	5.00	5.00	0.00
Macro Elements & Miscellaneous Determinants									
Aluminium	(mg / l as Al)	< 0.3	46	0.013	0.013	0.017	0.032	0.062	0.015
Ammonia	(mg / l as N)	< 1	49	0.025	0.068	0.175	0.282	0.430	0.107
Calcium	(mg / l as Ca)	< 150	46	16.000	17.283	18.935	20.587	22.000	1.652
Chloride	(mg / l as Cl)	< 200	46	9.500	9.656	11.330	13.005	16.355	1.675
Copper	(mg / l as Cu)	< 1	46	0.005	0.005	0.007	0.010	0.017	0.003
Fluoride	(mg / l as F)	< 1	46	0.075	0.127	0.173	0.219	0.270	0.046
Iron	(mg / l as Fe)	< 0.2	46	0.003	0.006	0.016	0.026	0.044	0.010
Magnesium	(mg / l as Mg)	< 70	46	6.715	7.174	7.404	7.634	7.900	0.230
Manganese	(mg / l as Mn)	< 0.1	46	0.005	0.005	0.005	0.007	0.011	0.002
Nitrate & Nitrite	(mg / l as N)	< 10	49	0.050	0.113	0.203	0.294	0.470	0.091
Potassium	(mg / l as K)	< 50	46	2.300	2.584	2.750	2.916	3.000	0.166
Sodium	(mg / l as Na)	< 200	46	9.000	9.490	10.572	11.654	13.817	1.082
Sulphate	(mg / l as SO ₄)	< 400	46	12.000	12.186	14.000	15.814	19.441	1.814
Zinc	(mg / l as Zn)	< 5	46	0.008	0.008	0.009	0.013	0.021	0.004
Microbiological									
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	49	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	49	0.12	0.53	1.05	1.57	2.20	0.52
Notes :									
(1) Specification date of effect : July 2006									
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices									