

Madibeng Municipality Water Quality Report - 1 Month Date generated: 30 June 2017

Determinand	Measurement units	Risk	Required compliance to SANS 241: 2015 standard (%)	SANS 241: 2015 standard limits (1)	No of results	Achieved Compliance to SANS 241: 2015 Spec(%)	Descriptive statistics		
							Mean	Standard Deviation	Mean + 3 standard deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	37	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	37	100.0%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	37	100.0%	0	1.04	4
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	15	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	15	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	75	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	2	100.0%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	37	100.0%	18.92	1.59	21.64
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	2	100.0%	125.00	0.00	125.00
Turbidity	(NTU)	Operational	95.0%	≤1	37	100.0%	0.25	0.13	0.47
Turbidity	(NTU)	Aesthetic	95.0%	≤5	37	100.0%	0.25	0.13	0.47
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	37	100.0%	7.79	0.12	8.12
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	37	100.0%	0.25	0.13	0.49
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	2	100.0%	11.00	0.00	11.00
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	37	100.0%	0.14	0.18	0.84
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	37	100.0%	0.81	0.36	1.60
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	2	100.0%	0.16	0.01	0.17
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	36	100.0%	0.57	0.05	0.67
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	37	100.0%	0.07	0.04	0.19
Combined nitrate plus nitrite	(NO ₂ /0.9 + NO ₃ /11)	Acute health	99.0%	≤1	36	100.0%	0.13	0.05	0.26
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	37	100.0%	0.94	0.34	1.67
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	2	100.0%	8.05	0.78	8.59
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	2	100.0%	13.50	0.71	13.99
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	2	100.0%	13.50	0.71	13.99
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	2	100.0%	0.02	0.00	0.02
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	2	100.0%	25.00	0.00	25.00
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	2	100.0%	0.50	0.00	0.50
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	2	100.0%	1.28	1.44	2.28
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	2	100.0%	29.50	7.78	34.89
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	2	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	2	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	2	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	2	100.0%	10.00	0.00	10.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	2	100.0%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	2	100.0%	15.00	4.24	17.94
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	2	100.0%	15.00	4.24	17.94
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	2	100.0%	0.20	0.00	0.20
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	2	100.0%	10.00	0.00	10.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	2	100.0%	10.00	0.00	10.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	2	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	2	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	2	100.0%	1.00	0.71	1.49
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	2	100.0%	0.20	0.00	0.20
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	2	100.0%	3.95	0.21	4.10
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	2	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	2	100.0%	45.00	12.73	53.82
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	2	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	2	100.0%	0.90	0.57	1.29
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	2	100.0%	12.50	0.71	12.99
Combined trihalomethanes	(CHCl ₃ /300 + CHBr ₃ /100 + CHBr ₂ Cl/100 + CHBrCl ₂ /60)	Chronic health	97.0%	≤1	2	100.0%	0.37	0.05	0.41
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	15	100.0%	0.36	0.00	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	2	100.0%	15.50	0.71	15.99
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	2	100.0%	58.48	2.26	60.04
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	2	100.0%	5.70	0.14	5.80
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	2	100.0%	3.50	0.00	3.50

Risk	Required compliance to SANS 241: 2015 standard	Overall Compliance-SANS 241
Acute health microbiological	99.00%	100.00%
Acute health chemical	99.00%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	100.00%

- Notes:**
- (1) Specification date of effect : 1 July 2016
 - (4) Residual disinfectant : Results from chloraminated system
 - (3) Monochloramine : Results are from the choraminated systems
 - (4) Residual disinfectant : Results from chloraminated system
 - (5) Measured at water treatment works exit points
 - (6) Customer request: Results not included in the risk indices compliance calculations