

Madibeng Municipality Water Quality Report - 1 Month

21 February 2017 to 22 March 2017 Date generated: 03 April 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%	11	19.43	86
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	14	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	14	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	74	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%	19.38	1.48	22.64
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	2	100.0%	145.00	21.21	159.70
Turbidity	(NTU)	Operational	95.0%	≤1	37	100.0%	0.23	0.10	0.44
Turbidity	(NTU)	Aesthetic	95.0%	≤5	37	100.0%	0.23	0.10	0.44
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	37	100.0%	8.02	0.11	8.22
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	37	100.0%	0.16	0.10	0.36
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	2	100.0%	9.95	0.07	10.00
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	37	100.0%	0.10	0.15	0.62
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	37	100.0%	0.81	0.31	0.00
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	2	100.0%	0.15	0.00	0.15
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	37	100.0%	0.72	0.12	0.85
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	37	100.0%	0.15	0.16	0.63
Combined nitrate plus nitrite	(NO ₂ /0.9 + NO ₃ /11)	Acute health	99.0%	≤1	37	100.0%	0.23	0.18	0.76
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	37	100.0%	0.91	0.36	1.56
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	2	100.0%	7.70	0.00	7.70
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	2	100.0%	12.50	0.71	12.99
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	2	100.0%	12.50	0.71	12.99
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%	28.50	4.95	31.93
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%	1.31	0.56	1.69
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	2	100.0%	32.50	0.71	32.99
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%	21.00	5.66	24.92
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	2	100.0%	21.00	5.66	24.92
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%	0.96	0.49	1.29
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	2	100.0%	0.28	0.11	0.36
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	2	100.0%	5.70	2.97	7.76
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%	39.00	5.66	42.92
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%	2.30	0.42	2.59
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	2	100.0%	12.50	2.12	13.97
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	0.06	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%	19.00	2.83	20.96
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	2	100.0%	67.39	6.82	72.11
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	2	100.0%	5.75	0.07	5.80
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	2	100.0%	3.10	0.14	3.20

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