

Madibeng Municipality Water Quality Report - 1 Month

23 December 2017 to 22 January 2018 Date generated: 20 February 2018

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	31	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	31	100.0%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	31	100.0%	8	22.67	95
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	16	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	16	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	63	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	4	100.0%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	31	100.0%	18.87	0.62	20.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	4	100.0%	131.25	2.50	134.85
Turbidity	(NTU)	Operational	95.0%	≤1	31	100.0%	0.35	0.08	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	31	100.0%	0.35	0.08	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	31	100.0%	7.81	0.11	8.10
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	31	100.0%	0.14	0.07	0.33
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	3	100.0%	11.00	1.00	11.98
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	31	100.0%	0.08	0.05	0.21
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	31	100.0%	0.56	0.27	1.11
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	3	100.0%	0.19	0.00	0.19
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	31	100.0%	0.44	0.00	0.45
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	31	100.0%	0.15	0.06	0.26
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	30	100.0%	0.20	0.07	0.33
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	31	100.0%	0.64	0.29	1.30
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	4	100.0%	6.83	0.25	7.09
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	3	100.0%	12.67	1.15	13.96
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	3	100.0%	12.67	1.15	13.96
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	4	100.0%	0.02	0.00	0.02
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	4	100.0%	28.50	7.00	38.58
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	4	100.0%	0.50	0.00	0.50
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	4	100.0%	0.10	0.00	0.10
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	4	100.0%	27.00	0.82	27.97
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	4	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	4	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	4	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	4	100.0%	19.00	16.69	43.04
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	4	100.0%	5.15	0.30	5.58
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	4	100.0%	10.85	3.52	15.82
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	4	100.0%	10.85	3.52	15.82
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	4	100.0%	0.20	0.00	0.20
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	4	100.0%	10.00	0.00	10.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	4	100.0%	10.00	0.00	10.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	4	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	4	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	4	100.0%	0.50	0.00	0.50
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	4	100.0%	0.20	0.00	0.20
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	4	100.0%	3.53	0.21	3.79
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	4	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	5	100.0%	47.80	9.15	63.24
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	5	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	5	100.0%	1.22	0.68	2.18
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	5	100.0%	12.98	3.97	18.76
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	5	100.0%	0.39	0.10	0.55
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	16	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	4	100.0%	13.50	0.58	14
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	4	100.0%	49.00	1.83	50.97
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	4	100.0%	4.45	0.13	4.60
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	4	100.0%	3.48	0.21	3.69
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	9	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	9	100.0%	1.00	0.00	1.00

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
 - (2) Free chlorine : Results from chloraminated system
 - (3) Monochloramine : Results are from the chloraminated 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
 - (7) (NO₂/0.9 + NO₃/11)
 - (8) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)