



RAND WATER

Merafong Water Quality Report
1 Month

20 February 2020 to 20 March 2020

Date generated: 13 April 2020

							Descriptive Statistics		
Determinands	Measurement Units	Risks	SANS 241:2015 standard limits (1)	No of results	Required compliances to SANS 241:2015 spec(%)	Achieved compliances to SANS 241:2015 spec(%)	Mean	Standard Deviation	Mean + 3 Std deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	66	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	66	95.0%	100%	0	0.12	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	66	95.0%	98.48%	77	367.34	1179
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	64	95.0%	98.44%	0	0.13	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	5	95.0%	100%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	≤ 170	61	95.0%	100%	23.46	0.85	26.00
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	5	95.0%	100%	163.00	6.71	183.13
Turbidity	(NTU)	Operational	≤ 1	61	95.0%	98.36%	0.35	0.48	1.79
Turbidity	(NTU)	Aesthetic	≤ 5	61	95.0%	100%	0.35	0.48	1.79
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	61	95.0%	100%	7.85	0.11	8.18
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	65	95.0%	100%	0.10	0.13	0.48
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	5	95.0%	100%	14.60	0.55	16.24
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	66	97.0%	100%	0.10	0.06	0.28
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	66	97.0%	100%	0.34	0.38	1.47
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	5	97.0%	100%	0.21	0.00	0.22
Nitrate	(mg / L as N)	Acute health	≤ 11	64	99.0%	100%	0.76	0.11	1.08
Nitrite	(mg / L as N)	Acute health	≤ 0.9	64	99.0%	100%	0.11	0.08	0.34
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	63	99.0%	100%	0.29	0.21	0.92
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	66	95.0%	84.85%	0.42	0.42	1.67
Sodium	(mg / L as Na)	Aesthetic	≤ 200	6	95.0%	100%	11.67	0.52	13.22
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	5	95.0%	100%	23.00	0.00	23.00
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	5	99.0%	100%	23.00	0.00	23.00
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	6	95.0%	100%	0.02	0.01	0.07
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	6	95.0%	100%	25.83	2.04	31.96
Antimony	(µg / L as Sb)	Chronic health	≤ 20	no data	97.0%	no data	.	no data	.
Arsenic	(µg / L as As)	Chronic health	≤ 10	5	97.0%	100%	1.42	1.39	5.58
Barium	(µg / L as Ba)	Chronic health	≤ 700	6	97.0%	100%	44.33	1.75	49.59
Boron	(µg / L as B)	Chronic health	≤ 2400	6	97.0%	100%	11.00	2.45	18.35
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	5	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	6	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	6	97.0%	100%	8.47	0.73	10.67
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	5	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	6	97.0%	100%	19.00	4.86	33.57
Iron	(µg / L as Fe)	Aesthetic	≤ 300	6	95.0%	100%	19.00	4.86	33.57
Lead	(µg / L as Pb)	Chronic health	≤ 10	5	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	6	97.0%	100%	3.00	0.00	3.00
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	6	95.0%	100%	3.00	0.00	3.00
Mercury	(µg / L as Hg)	Chronic health	≤ 6	no data	97.0%	no data	.	no data	.
Nickel	(µg / L as Ni)	Chronic health	≤ 70	6	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	5	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	no data	97.0%	no data	.	no data	.
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	9	97.0%	100%	3.68	0.07	3.88
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	5	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	6	97.0%	100%	43.17	3.49	53.63
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	6	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	6	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	6	97.0%	100%	16.83	2.56	24.52
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	6	97.0%	100%	0.45	0.05	0.61
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	16	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	6	not applicable	100%	17.67	0.52	19.22
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	6	not applicable	100%	71.00	2.00	77.00
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	6	not applicable	100%	7.77	0.22	8.41
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	6	not applicable	100%	3.58	0.12	3.93
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	25	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	25	not applicable	100%	1.00	0.00	1.00

Risks	Required compliances to SANS 241: 2015 standard	Overall Compliances - SANS 241: 2015 standard
Acute health microbiological	99.0%	100%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	96.67%

- Notes
 (1) Specification SANS 241 date of effect : 1 July 2016
 (2) Measured at water treatment works exit points
 (3) (NO₂/0.9 + NO₃/11)
 (4) Residual disinfectant : Results from the chloraminated system = Sum of Free and Monochloramine
 (5) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)
 (6) Customer request: Results not included in the risk indices compliance calculations and limits based on SANS 241:2006
 (7) Customer request: Results not included in the risk indices compliance calculations and limits based on RW Internal Spec
 **** Determinands with no data are due to instrument breakdown****