



RAND WATER

Merafong Water Quality Report
1 Month

22 April 2021 to 21 May 2021

Date generated: 04 June 2021

							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	63	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	63	95.0%	100%	0	0.13	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	63	95.0%	100%	8	18.79	65
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	.	no data	.
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	.	no data	.
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	62	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	5	95.0%	100%	10.80	3.49	21.28
Conductivity	(mS / m)	Aesthetic	≤ 170	58	95.0%	100%	22.62	0.64	24.55
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	5	95.0%	100%	153.00	2.74	161.22
Turbidity	(NTU)	Operational	≤ 1	58	95.0%	100%	0.33	0.08	0.57
Turbidity	(NTU)	Aesthetic	≤ 5	58	95.0%	100%	0.33	0.08	0.57
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	58	95.0%	100%	7.80	0.19	8.38
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	62	95.0%	100%	0.18	0.11	0.52
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	5	95.0%	100%	17.40	0.89	20.08
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	63	97.0%	100%	0.08	0.05	0.23
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	63	97.0%	100%	0.48	0.44	1.81
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	5	97.0%	100%	0.37	0.07	0.58
Nitrate	(mg / L as N)	Acute health	≤ 11	61	99.0%	100%	0.83	0.17	1.35
Nitrite	(mg / L as N)	Acute health	≤ 0.9	61	99.0%	100%	0.09	0.08	0.32
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	54	99.0%	100%	0.18	0.08	0.41
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	63	95.0%	80.95%	0.53	0.48	1.96
Sodium	(mg / L as Na)	Aesthetic	≤ 200	5	95.0%	100%	12.00	0.00	12.00
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	5	95.0%	100%	18.80	0.45	20.14
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	5	99.0%	100%	18.80	0.45	20.14
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	5	95.0%	100%	0.10	0.19	0.65
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	5	95.0%	100%	50.00	0.00	50.00
Antimony	(µg / L as Sb)	Chronic health	≤ 20	5	97.0%	100%	0.30	0.00	0.30
Arsenic	(µg / L as As)	Chronic health	≤ 10	5	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	5	97.0%	100%	53.20	0.84	55.71
Boron	(µg / L as B)	Chronic health	≤ 2400	5	97.0%	100%	11.20	0.45	12.54
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	5	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	5	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	5	97.0%	100%	8.86	1.30	12.76
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	5	97.0%	100%	38.00	11.83	73.50
Iron	(µg / L as Fe)	Aesthetic	≤ 300	5	95.0%	100%	38.00	11.83	73.50
Lead	(µg / L as Pb)	Chronic health	≤ 10	5	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	5	97.0%	100%	3.16	0.26	3.94
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	5	95.0%	100%	3.16	0.26	3.94
Mercury	(µg / L as Hg)	Chronic health	≤ 6	5	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	5	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	5	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	5	97.0%	100%	0.11	0.01	0.15
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	10	97.0%	100%	4.99	0.16	5.47
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	6	95.0%	100%	2.50	0.00	2.50
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	6	97.0%	100%	88.83	4.71	102.96
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%	20.17	1.17	23.67
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	6	97.0%	100%	0.64	0.02	0.69
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	20	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	5	not applicable	100%	17.40	0.55	19.04
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	5	not applicable	100%	69.80	2.05	75.95
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	5	not applicable	100%	7.64	0.17	8.14
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	5	not applicable	100%	4.28	0.13	4.67
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%	96.77%

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****