



RAND WATER

Merafong Water Quality Report
1 Month

23 March 2021 to 21 April 2021

Date generated: 14 May 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	60	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	60	95.0%	100%	0	0.52	2
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	60	95.0%	98.33%	79	386.04	1237
<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	79	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	8	95.0%	100%	13.25	0.71	15.37
Conductivity	(mS / m)	Aesthetic	≤ 170	56	95.0%	100%	23.77	1.06	26.95
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	7	95.0%	100%	167.86	2.67	175.88
Turbidity	(NTU)	Operational	≤ 1	56	95.0%	100%	0.34	0.05	0.50
Turbidity	(NTU)	Aesthetic	≤ 5	56	95.0%	100%	0.34	0.05	0.50
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	56	95.0%	100%	7.81	0.14	8.22
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	59	95.0%	100%	0.18	0.13	0.56
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	6	95.0%	100%	17.67	1.21	21.30
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	60	97.0%	100%	0.07	0.02	0.12
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	60	97.0%	100%	0.48	0.48	1.92
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	6	97.0%	100%	0.42	0.02	0.49
Nitrate	(mg / L as N)	Acute health	≤ 11	57	99.0%	100%	0.94	0.21	1.56
Nitrite	(mg / L as N)	Acute health	≤ 0.9	57	99.0%	100%	0.08	0.09	0.36
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	56	99.0%	100%	0.18	0.10	0.48
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	60	95.0%	73.33%	0.52	0.50	2.01
Sodium	(mg / L as Na)	Aesthetic	≤ 200	8	95.0%	100%	6.75	0.27	7.55
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	6	95.0%	100%	20.50	1.22	24.17
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	6	99.0%	100%	20.50	1.22	24.17
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	8	95.0%	100%	0.10	0.00	0.10
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	8	95.0%	100%	19.99	9.94	49.79
Antimony	(µg / L as Sb)	Chronic health	≤ 20	8	97.0%	100%	0.30	0.00	0.30
Arsenic	(µg / L as As)	Chronic health	≤ 10	8	97.0%	100%	0.73	0.21	1.36
Barium	(µg / L as Ba)	Chronic health	≤ 700	8	97.0%	100%	33.38	1.60	38.17
Boron	(µg / L as B)	Chronic health	≤ 2400	8	97.0%	100%	3.04	0.11	3.36
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	8	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	8	97.0%	100%	0.20	0.00	0.20
Copper	(µg / L as Cu)	Chronic health	≤ 2000	8	97.0%	100%	4.61	2.17	11.12
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	8	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	8	97.0%	100%	18.13	7.06	39.30
Iron	(µg / L as Fe)	Aesthetic	≤ 300	8	95.0%	100%	18.13	7.06	39.30
Lead	(µg / L as Pb)	Chronic health	≤ 10	8	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	8	97.0%	100%	3.16	1.23	6.86
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	8	95.0%	100%	3.16	1.23	6.86
Mercury	(µg / L as Hg)	Chronic health	≤ 6	8	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	8	97.0%	100%	1.09	0.28	1.94
Selenium	(µg / L as Se)	Chronic health	≤ 40	8	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	8	97.0%	100%	0.10	0.00	0.10
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	3	97.0%	100%	5.20	0.17	5.72
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	7	95.0%	100%	2.50	0.00	2.50
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	7	97.0%	100%	98.57	5.56	115.26
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	7	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	7	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	7	97.0%	100%	21.29	1.98	27.21
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	7	97.0%	100%	0.70	0.03	0.80
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	24	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	8	not applicable	100%	11.88	0.64	13.80
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	8	not applicable	100%	49.13	2.10	55.43
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	8	not applicable	100%	4.59	0.20	5.18
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	8	not applicable	100%	2.66	0.11	2.98
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	18	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	18	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%	95.51%

- 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****