



RAND WATER

Merafong Water Quality Report
1 Month

22 September 2020 to 22 October 2020

Date generated: 06 November 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	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	66	95.0%	100%	15	34.62	119
<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	80	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	8	95.0%	100%	7.00	2.14	13.41
Conductivity	(mS / m)	Aesthetic	≤ 170	61	95.0%	100%	20.44	2.38	27.60
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	7	95.0%	100%	140.00	9.13	167.39
Turbidity	(NTU)	Operational	≤ 1	61	95.0%	100%	0.25	0.01	0.30
Turbidity	(NTU)	Aesthetic	≤ 5	61	95.0%	100%	0.25	0.01	0.30
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	61	95.0%	100%	8.03	0.16	8.51
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	65	95.0%	100%	0.29	0.13	0.67
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	8	95.0%	100%	10.10	0.61	11.94
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	66	97.0%	100%	0.08	0.03	0.17
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	66	97.0%	100%	1.29	0.35	2.34
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	8	97.0%	100%	0.33	0.02	0.40
Nitrate	(mg / L as N)	Acute health	≤ 11	65	99.0%	100%	0.60	0.08	0.84
Nitrite	(mg / L as N)	Acute health	≤ 0.9	65	99.0%	100%	0.04	0.04	0.17
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	64	99.0%	100%	0.10	0.05	0.26
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	66	95.0%	96.97%	1.36	0.37	2.45
Sodium	(mg / L as Na)	Aesthetic	≤ 200	8	95.0%	100%	9.26	0.13	9.65
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	8	95.0%	100%	14.25	0.46	15.64
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	8	99.0%	100%	14.25	0.46	15.64
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	8	95.0%	100%	0.02	0.00	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	8	95.0%	100%	50.00	0.00	50.00
Antimony	(µg / L as Sb)	Chronic health	≤ 20	8	97.0%	100%	0.60	0.01	0.62
Arsenic	(µg / L as As)	Chronic health	≤ 10	8	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	8	97.0%	100%	38.00	0.53	39.60
Boron	(µg / L as B)	Chronic health	≤ 2400	8	97.0%	100%	3.00	0.00	3.00
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	8	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	8	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	8	97.0%	100%	8.40	0.77	10.71
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%	13.24	2.88	21.88
Iron	(µg / L as Fe)	Aesthetic	≤ 300	8	95.0%	100%	13.24	2.88	21.88
Lead	(µg / L as Pb)	Chronic health	≤ 10	8	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	8	97.0%	100%	3.00	0.00	3.00
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	8	95.0%	100%	3.00	0.00	3.00
Mercury	(µg / L as Hg)	Chronic health	≤ 6	8	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	8	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	8	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	8	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	8	97.0%	100%	3.40	0.19	3.96
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	8	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	8	97.0%	100%	28.00	2.62	35.86
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	8	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	8	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	8	97.0%	100%	13.00	1.07	16.21
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	8	97.0%	100%	0.34	0.02	0.41
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	8	not applicable	100%	15.13	0.35	16.19
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	7	not applicable	100%	59.43	0.53	61.03
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	8	not applicable	100%	6.29	0.25	7.05
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	8	not applicable	100%	2.93	0.05	3.06
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	19	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	19	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%	99.51%

- 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****