



RAND WATER
Metsimaholo Water Quality Report
1 Month

23 October 2020 to 20 November 2020

Date generated: 04 December 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	51	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	51	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	52	95.0%	100%	1	2.32	8
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	17	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	17	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	68	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	8	95.0%	100%	6.63	1.41	10.85
Conductivity	(mS / m)	Aesthetic	≤ 170	27	95.0%	100%	21.56	3.00	30.57
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	8	95.0%	100%	145.00	11.34	179.02
Turbidity	(NTU)	Operational	≤ 1	27	95.0%	100%	0.28	0.06	0.46
Turbidity	(NTU)	Aesthetic	≤ 5	27	95.0%	100%	0.28	0.06	0.46
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	27	95.0%	100%	8.05	0.17	8.57
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	27	95.0%	100%	0.11	0.04	0.22
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	5	95.0%	100%	10.06	0.88	12.69
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	52	97.0%	100%	1.28	0.46	2.67
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	n/a	97.0%	n/a	n/a	n/a	n/a
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	5	97.0%	100%	0.27	0.05	0.43
Nitrate	(mg / L as N)	Acute health	≤ 11	27	99.0%	100%	0.53	0.09	0.80
Nitrite	(mg / L as N)	Acute health	≤ 0.9	27	99.0%	100%	0.13	0.22	0.79
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	27	99.0%	100%	0.20	0.24	0.92
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	52	95.0%	96.15%	1.28	0.46	2.67
Sodium	(mg / L as Na)	Aesthetic	≤ 200	6	95.0%	100%	9.17	0.71	11.30
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	8	95.0%	100%	15.63	1.92	21.39
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	8	99.0%	100%	15.63	1.92	21.39
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	6	95.0%	100%	0.02	0.00	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	6	95.0%	100%	50.00	0.00	50.00
Antimony	(µg / L as Sb)	Chronic health	≤ 20	5	97.0%	100%	0.75	0.26	1.53
Arsenic	(µg / L as As)	Chronic health	≤ 10	4	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	6	97.0%	100%	33.83	4.71	47.96
Boron	(µg / L as B)	Chronic health	≤ 2400	6	97.0%	100%	7.60	4.80	21.99
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	4	97.0%	100%	1.50	0.00	1.50
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%	8.00	0.00	8.00
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	6	97.0%	100%	22.33	15.29	68.21
Iron	(µg / L as Fe)	Aesthetic	≤ 300	6	95.0%	100%	22.33	15.29	68.21
Lead	(µg / L as Pb)	Chronic health	≤ 10	4	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	6	97.0%	100%	3.22	0.53	4.81
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	6	95.0%	100%	3.22	0.53	4.81
Mercury	(µg / L as Hg)	Chronic health	≤ 6	4	97.0%	100%	1.50	0.00	1.50
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	4	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	5	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	5	97.0%	100%	3.18	0.44	4.51
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%	26.83	15.39	73.01
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%	12.83	2.93	21.61
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	6	97.0%	100%	0.29	0.16	0.77
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	8	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%	16.83	1.72	22.00
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	6	not applicable	100%	63.17	5.60	79.97
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	6	not applicable	100%	6.10	0.37	7.22
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	6	not applicable	100%	2.83	0.10	3.14
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	10	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	10	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%	99.29%

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 chlorinated system = Free available chlorine
(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****