



RAND WATER

Metsimaholo Water Quality Report
1 Month

23 December 2020 to 22 January 2021

Date generated: 08 February 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	53	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	53	95.0%	98.11%	3	19.92	62
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	53	95.0%	100%	2	3.03	11
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	26	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	26	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	6	95.0%	100%	7.33	0.52	8.88
Conductivity	(mS / m)	Aesthetic	≤ 170	25	95.0%	100%	22.96	3.98	34.91
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	6	95.0%	100%	151.67	16.63	201.57
Turbidity	(NTU)	Operational	≤ 1	25	95.0%	100%	0.30	0.10	0.59
Turbidity	(NTU)	Aesthetic	≤ 5	25	95.0%	100%	0.30	0.10	0.59
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	25	95.0%	100%	8.13	0.20	8.72
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	26	95.0%	100%	0.12	0.08	0.36
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	4	95.0%	100%	13.25	2.22	19.90
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	53	97.0%	100%	1.31	0.43	2.60
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	4	97.0%	100%	0.31	0.03	0.41
Nitrate	(mg / L as N)	Acute health	≤ 11	26	99.0%	100%	0.51	0.07	0.73
Nitrite	(mg / L as N)	Acute health	≤ 0.9	26	99.0%	100%	0.03	0.01	0.05
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	26	99.0%	100%	0.08	0.01	0.11
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	53	95.0%	100%	1.31	0.43	2.60
Sodium	(mg / L as Na)	Aesthetic	≤ 200	7	95.0%	100%	9.71	0.93	12.51
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	7	95.0%	100%	15.57	0.53	17.18
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	7	99.0%	100%	15.57	0.53	17.18
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	7	95.0%	100%	0.01	0.02	0.06
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	6	95.0%	100%	25.50	7.42	47.77
Antimony	(µg / L as Sb)	Chronic health	≤ 20	5	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	5	97.0%	100%	0.80	0.00	0.80
Barium	(µg / L as Ba)	Chronic health	≤ 700	7	97.0%	100%	37.29	2.50	44.78
Boron	(µg / L as B)	Chronic health	≤ 2400	7	97.0%	100%	4.76	2.11	11.10
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	7	97.0%	100%	0.83	0.60	2.62
Copper	(µg / L as Cu)	Chronic health	≤ 2000	7	97.0%	100%	2.50	1.24	6.21
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	3	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	7	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	7	95.0%	100%	100.00	0.00	100.00
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	7	97.0%	100%	2.96	2.53	10.55
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	7	95.0%	100%	2.96	2.53	10.55
Mercury	(µg / L as Hg)	Chronic health	≤ 6	5	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	7	97.0%	100%	3.00	0.00	3.00
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	5	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	4	97.0%	100%	3.25	0.13	3.64
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	4	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	5	97.0%	100%	44.60	25.30	120.51
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	5	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	5	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	5	97.0%	100%	13.80	3.42	24.06
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	5	97.0%	100%	0.38	0.20	0.96
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	no data	97.0%	no data	no data	no data	no data
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	7	not applicable	100%	16.86	1.35	20.89
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	7	not applicable	100%	67.71	4.07	79.93
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	7	not applicable	100%	6.23	0.47	7.63
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	7	not applicable	100%	3.03	0.24	3.74
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	6	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	6	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%	99.65%

- 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****