



RAND WATER
Thembisile Water Quality Report
1 Month

23 January 2021 to 19 February 2021

Date generated: 10 March 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	12	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	12	95.0%	100%	0	0.58	2
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	12	95.0%	100%	4	7.22	25
<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	72	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	1	95.0%	100%	5.00	no data	5.00
Conductivity	(mS / m)	Aesthetic	≤ 170	12	95.0%	100%	22.92	2.15	29.37
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	1	95.0%	100%	165.00	no data	165.00
Turbidity	(NTU)	Operational	≤ 1	12	95.0%	100%	0.39	0.13	0.78
Turbidity	(NTU)	Aesthetic	≤ 5	12	95.0%	100%	0.39	0.13	0.78
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	12	95.0%	100%	7.83	0.15	8.29
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	12	95.0%	100%	0.21	0.08	0.46
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	1	95.0%	100%	12.00	no data	12.00
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	12	97.0%	100%	0.07	0.02	0.12
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	12	97.0%	100%	0.76	0.18	1.30
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	1	97.0%	100%	0.20	no data	0.20
Nitrate	(mg / L as N)	Acute health	≤ 11	11	99.0%	100%	0.72	0.28	1.56
Nitrite	(mg / L as N)	Acute health	≤ 0.9	10	99.0%	100%	0.26	0.14	0.69
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	11	99.0%	100%	0.39	0.19	0.95
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	12	95.0%	100%	0.82	0.19	1.40
Sodium	(mg / L as Na)	Aesthetic	≤ 200	1	95.0%	100%	10.00	no data	10.00
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	1	95.0%	100%	15.00	no data	15.00
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	1	99.0%	100%	15.00	no data	15.00
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	2	95.0%	100%	0.01	0.01	0.03
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	2	95.0%	100%	9.40	0.85	11.95
Antimony	(µg / L as Sb)	Chronic health	≤ 20	1	97.0%	100%	0.60	no data	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	2	97.0%	100%	0.93	0.07	1.14
Barium	(µg / L as Ba)	Chronic health	≤ 700	2	97.0%	100%	49.00	11.31	82.94
Boron	(µg / L as B)	Chronic health	≤ 2400	2	97.0%	100%	8.85	10.11	39.18
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	2	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	2	97.0%	100%	0.50	0.00	0.50
Copper	(µg / L as Cu)	Chronic health	≤ 2000	2	97.0%	100%	21.65	21.71	86.77
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	1	99.0%	100%	5.00	no data	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	1	97.0%	100%	100.00	no data	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	1	95.0%	100%	100.00	no data	100.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	2	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	2	97.0%	100%	24.50	19.09	81.78
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	2	95.0%	100%	24.50	19.09	81.78
Mercury	(µg / L as Hg)	Chronic health	≤ 6	2	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	2	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	2	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	1	97.0%	100%	0.50	no data	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	1	97.0%	100%	4.10	no data	4.10
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	1	95.0%	100%	3.00	no data	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	1	97.0%	100%	90.00	no data	90.00
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	1	97.0%	100%	10.00	no data	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	1	97.0%	100%	10.00	no data	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	1	97.0%	100%	15.00	no data	15.00
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	1	97.0%	100%	0.56	no data	0.56
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	no data	97.0%	no data	.	no data	.
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	2	not applicable	100%	27.50	9.19	55.08
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	2	not applicable	100%	123.50	65.76	320.78
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	2	not applicable	100%	13.65	10.39	44.83
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	2	not applicable	100%	7.00	3.96	18.88
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	4	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	4	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%	100%

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****