



RAND WATER

Thembisile Water Quality Report
1 Month

22 August 2020 to 21 September 2020

Date generated: 02 October 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	12	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	12	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	12	95.0%	100%	0	0.00	0
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	93.75%	0	0.50	2
<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%	7.00	no data	7.00
Conductivity	(mS / m)	Aesthetic	≤ 170	12	95.0%	100%	21.25	2.26	28.03
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	1	95.0%	100%	140.00	no data	140.00
Turbidity	(NTU)	Operational	≤ 1	12	95.0%	100%	0.27	0.04	0.40
Turbidity	(NTU)	Aesthetic	≤ 5	12	95.0%	100%	0.27	0.04	0.40
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	12	95.0%	100%	8.19	0.10	8.49
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	12	95.0%	100%	0.37	0.04	0.50
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%	0.09	0.02	0.16
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	12	97.0%	100%	1.70	0.09	1.98
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	12	99.0%	100%	0.65	0.09	0.92
Nitrite	(mg / L as N)	Acute health	≤ 0.9	12	99.0%	100%	0.02	0.01	0.04
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	12	99.0%	100%	0.14	0.18	0.68
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	12	95.0%	100%	1.79	0.11	2.12
Sodium	(mg / L as Na)	Aesthetic	≤ 200	2	95.0%	100%	9.25	1.06	12.43
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	1	95.0%	100%	17.00	no data	17.00
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	1	99.0%	100%	17.00	no data	17.00
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	2	95.0%	100%	0.02	0.00	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	2	95.0%	100%	32.00	5.66	48.97
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%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	2	97.0%	100%	33.00	1.41	37.24
Boron	(µg / L as B)	Chronic health	≤ 2400	2	97.0%	100%	5.65	0.78	7.98
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	2	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	2	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	2	97.0%	100%	8.00	0.00	8.00
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	2	97.0%	100%	11.65	3.32	21.62
Iron	(µg / L as Fe)	Aesthetic	≤ 300	2	95.0%	100%	11.65	3.32	21.62
Lead	(µg / L as Pb)	Chronic health	≤ 10	2	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	2	97.0%	100%	3.00	0.00	3.00
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	2	95.0%	100%	3.00	0.00	3.00
Mercury	(µg / L as Hg)	Chronic health	≤ 6	2	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	2	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	2	97.0%	100%	8.00	0.00	8.00
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%	4.20	no data	4.20
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%	39.00	no data	39.00
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%	16.00	no data	16.00
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	1	97.0%	100%	0.42	no data	0.42
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	2	not applicable	100%	17.50	0.71	19.62
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	2	not applicable	100%	65.50	4.95	80.35
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	2	not applicable	100%	6.20	0.99	9.17
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	2	not applicable	100%	2.90	0.42	4.17
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%	97.73%
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****