



RAND WATER

Tshwane Water Quality Report
1 Month

23 March 2021 to 21 April 2021

Date generated: 14 May 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	90	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	90	95.0%	98.89%	2	17.39	54
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	90	95.0%	100%	5	16.76	56
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	.	no data	.
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	.	no data	.
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	88	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	15	95.0%	100%	11.67	2.69	19.74
Conductivity	(mS / m)	Aesthetic	≤ 170	90	95.0%	100%	24.02	1.68	29.05
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	17	95.0%	100%	167.35	8.68	193.40
Turbidity	(NTU)	Operational	≤ 1	90	95.0%	100%	0.35	0.10	0.64
Turbidity	(NTU)	Aesthetic	≤ 5	90	95.0%	100%	0.35	0.10	0.64
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	90	95.0%	100%	7.79	0.11	8.13
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	89	95.0%	100%	0.20	0.14	0.61
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	11	95.0%	100%	14.82	1.78	20.15
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	90	97.0%	100%	0.08	0.06	0.25
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	90	97.0%	100%	0.98	0.32	1.95
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	11	97.0%	100%	0.27	0.07	0.49
Nitrate	(mg / L as N)	Acute health	≤ 11	89	99.0%	100%	0.81	0.14	1.24
Nitrite	(mg / L as N)	Acute health	≤ 0.9	85	99.0%	100%	0.13	0.11	0.45
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	81	99.0%	100%	0.24	0.17	0.74
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	90	95.0%	100%	1.05	0.33	2.03
Sodium	(mg / L as Na)	Aesthetic	≤ 200	17	95.0%	100%	6.74	1.25	10.48
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	11	95.0%	100%	17.27	2.24	23.99
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	11	99.0%	100%	17.27	2.24	23.99
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	8	95.0%	100%	0.06	0.05	0.22
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	17	95.0%	100%	9.54	6.16	28.02
Antimony	(µg / L as Sb)	Chronic health	≤ 20	15	97.0%	100%	0.40	0.20	1.00
Arsenic	(µg / L as As)	Chronic health	≤ 10	17	97.0%	100%	0.91	1.11	4.24
Barium	(µg / L as Ba)	Chronic health	≤ 700	17	97.0%	100%	42.41	7.10	63.71
Boron	(µg / L as B)	Chronic health	≤ 2400	17	97.0%	100%	3.76	1.64	8.69
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	17	97.0%	100%	0.84	0.35	1.90
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	17	97.0%	100%	0.52	1.16	4.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	17	97.0%	100%	3.61	2.83	12.10
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	15	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	17	97.0%	100%	23.52	32.64	121.45
Iron	(µg / L as Fe)	Aesthetic	≤ 300	17	95.0%	100%	23.52	32.64	121.45
Lead	(µg / L as Pb)	Chronic health	≤ 10	17	97.0%	100%	1.92	0.91	4.67
Manganese	(µg / L as Mn)	Chronic health	≤ 400	17	97.0%	100%	2.78	2.14	9.20
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	17	95.0%	100%	2.78	2.14	9.20
Mercury	(µg / L as Hg)	Chronic health	≤ 6	17	97.0%	100%	0.71	0.23	1.40
Nickel	(µg / L as Ni)	Chronic health	≤ 70	17	97.0%	100%	1.40	1.29	5.27
Selenium	(µg / L as Se)	Chronic health	≤ 40	17	97.0%	100%	3.80	0.95	6.64
Uranium	(µg / L as U)	Chronic health	≤ 30	15	97.0%	100%	0.25	0.29	1.11
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	15	97.0%	100%	5.68	0.81	8.10
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	11	95.0%	100%	2.50	0.00	2.50
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	15	97.0%	100%	84.47	5.74	101.70
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	15	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	15	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	15	97.0%	100%	19.33	1.05	22.47
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	15	97.0%	100%	0.62	0.04	0.73
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	24	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	17	not applicable	100%	11.50	3.54	22.11
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	17	not applicable	100%	49.41	18.22	104.08
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	17	not applicable	100%	5.00	2.38	12.14
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	17	not applicable	100%	2.62	0.96	5.48
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%	99.82%

- 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****