



RAND WATER

Rustenburg 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	65	99.0%	98.46%	0	0.12	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	65	95.0%	90.77%	9	33.70	111
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	65	95.0%	89.23%	308	879.60	2947
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	1	99.0%	100%	0	no data	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	1	99.0%	100%	0	no data	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	6	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	13	95.0%	100%	7.46	1.66	12.45
Conductivity	(mS / m)	Aesthetic	≤ 170	64	95.0%	100%	35.16	19.71	94.30
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	13	95.0%	100%	302.69	130.01	692.72
Turbidity	(NTU)	Operational	≤ 1	65	95.0%	100%	0.37	0.13	0.76
Turbidity	(NTU)	Aesthetic	≤ 5	65	95.0%	100%	0.37	0.13	0.76
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	64	95.0%	100%	7.77	0.17	8.29
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	64	95.0%	100%	0.13	0.10	0.45
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	14	95.0%	100%	54.29	49.84	203.81
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	65	97.0%	100%	0.35	0.58	2.08
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	65	97.0%	100%	0.18	0.15	0.63
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	14	97.0%	100%	0.40	0.19	0.97
Nitrate	(mg / L as N)	Acute health	≤ 11	66	99.0%	100%	0.70	0.24	1.42
Nitrite	(mg / L as N)	Acute health	≤ 0.9	56	99.0%	100%	0.20	0.15	0.64
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	60	99.0%	100%	0.33	0.21	0.95
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	65	95.0%	86.15%	0.50	0.58	2.24
Sodium	(mg / L as Na)	Aesthetic	≤ 200	10	95.0%	100%	10.62	3.15	20.07
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	14	95.0%	100%	41.64	29.51	130.18
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	14	99.0%	100%	41.64	29.51	130.18
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	11	95.0%	100%	0.08	0.25	0.85
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	11	95.0%	100%	13.72	9.29	41.59
Antimony	(µg / L as Sb)	Chronic health	≤ 20	11	97.0%	100%	1.03	0.95	3.88
Arsenic	(µg / L as As)	Chronic health	≤ 10	11	97.0%	100%	0.85	0.06	1.04
Barium	(µg / L as Ba)	Chronic health	≤ 700	11	97.0%	100%	42.91	9.92	72.68
Boron	(µg / L as B)	Chronic health	≤ 2400	10	97.0%	100%	4.58	3.97	16.50
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	11	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	11	97.0%	100%	0.59	0.30	1.50
Copper	(µg / L as Cu)	Chronic health	≤ 2000	11	97.0%	100%	5.20	4.10	17.51
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	13	99.0%	100%	5.28	1.03	8.36
Iron	(µg / L as Fe)	Chronic health	≤ 2000	11	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	11	95.0%	100%	100.00	0.00	100.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	11	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	11	97.0%	100%	5.92	8.44	31.23
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	11	95.0%	100%	5.92	8.44	31.23
Mercury	(µg / L as Hg)	Chronic health	≤ 6	11	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	11	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	11	97.0%	100%	4.03	0.09	4.30
Uranium	(µg / L as U)	Chronic health	≤ 30	11	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	12	97.0%	100%	4.52	0.71	6.65
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	12	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	12	97.0%	100%	52.25	21.81	117.68
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	12	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	12	97.0%	100%	15.42	7.05	36.57
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	12	97.0%	100%	21.33	9.68	50.37
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	12	97.0%	100%	0.64	0.24	1.36
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	11	not applicable	100%	21.48	6.46	40.87
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	11	not applicable	100%	85.09	33.22	184.75
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	11	not applicable	100%	7.74	4.62	21.58
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	11	not applicable	100%	4.48	1.97	10.39
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	37	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	37	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%	98.51%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	93.55%

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****