



RAND WATER

Rustenburg Water Quality Report
1 Month

22 September 2020 to 22 October 2020

Date generated: 06 November 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	89	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	89	95.0%	100%	0	1.07	3
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	89	95.0%	100%	2	6.71	22
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	2	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	2	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	9	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	16	95.0%	93.75%	7.00	4.02	19.05
Conductivity	(mS / m)	Aesthetic	≤ 170	88	95.0%	100%	34.72	23.86	106.30
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	14	95.0%	100%	297.50	158.54	773.11
Turbidity	(NTU)	Operational	≤ 1	89	95.0%	98.88%	0.31	0.22	0.96
Turbidity	(NTU)	Aesthetic	≤ 5	89	95.0%	100%	0.31	0.22	0.96
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	88	95.0%	100%	8.04	0.28	8.88
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	88	95.0%	100%	0.30	0.15	0.75
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	14	95.0%	100%	51.66	49.55	200.29
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	89	97.0%	100%	0.41	0.66	2.40
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	89	97.0%	100%	1.07	0.58	2.80
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	15	97.0%	100%	0.44	0.17	0.94
Nitrate	(mg / L as N)	Acute health	≤ 11	88	99.0%	100%	0.58	0.10	0.88
Nitrite	(mg / L as N)	Acute health	≤ 0.9	89	99.0%	100%	0.03	0.01	0.05
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	86	99.0%	100%	0.08	0.01	0.13
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	89	95.0%	100%	1.47	0.36	2.56
Sodium	(mg / L as Na)	Aesthetic	≤ 200	16	95.0%	100%	41.16	29.35	129.21
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	15	95.0%	100%	44.87	33.91	146.58
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	15	99.0%	100%	44.87	33.91	146.58
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	16	95.0%	100%	0.26	0.44	1.58
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	16	95.0%	100%	51.13	12.15	87.57
Antimony	(µg / L as Sb)	Chronic health	≤ 20	12	97.0%	100%	0.60	0.00	0.61
Arsenic	(µg / L as As)	Chronic health	≤ 10	12	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	16	97.0%	100%	45.88	9.76	75.16
Boron	(µg / L as B)	Chronic health	≤ 2400	16	97.0%	100%	24.56	21.15	88.01
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	12	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	16	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	16	97.0%	100%	9.94	4.20	22.55
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	16	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	16	97.0%	100%	25.19	17.99	79.15
Iron	(µg / L as Fe)	Aesthetic	≤ 300	16	95.0%	100%	25.19	17.99	79.15
Lead	(µg / L as Pb)	Chronic health	≤ 10	12	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	16	97.0%	100%	22.25	24.82	96.70
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	16	95.0%	100%	22.25	24.82	96.70
Mercury	(µg / L as Hg)	Chronic health	≤ 6	12	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	16	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	12	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	12	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	12	97.0%	100%	4.79	1.85	10.34
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	13	97.0%	100%	20.69	5.68	37.72
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	13	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	13	97.0%	100%	13.23	5.00	28.24
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	13	97.0%	100%	14.38	5.47	30.80
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	13	97.0%	100%	0.41	0.20	1.01
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	6	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	16	not applicable	100%	29.75	10.57	61.45
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	16	not applicable	100%	130.06	58.61	305.90
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	16	not applicable	100%	17.06	10.04	47.18
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	16	not applicable	100%	6.64	3.45	16.99
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	40	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	40	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%	99.75%
Operational	95.0%	99.79%

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****