



RAND WATER

Ngwathe Water Quality Report  
1 Month

23 October 2020 to 20 November 2020

Date generated: 04 December 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
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	51	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	51	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	53	95.0%	100%	1	2.20	7
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	17	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	17	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	68	95.0%	100%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	10	95.0%	100%	6.80	1.48	11.23
Conductivity	(mS / m)	Aesthetic	≤ 170	28	95.0%	100%	21.79	2.91	30.52
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	10	95.0%	100%	145.50	11.65	180.46
Turbidity	(NTU)	Operational	≤ 1	28	95.0%	100%	0.28	0.06	0.45
Turbidity	(NTU)	Aesthetic	≤ 5	28	95.0%	100%	0.28	0.06	0.45
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	28	95.0%	100%	8.14	0.17	8.66
<b>Chemical Properties: Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	28	95.0%	100%	0.12	0.06	0.29
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	7	95.0%	100%	9.90	0.80	12.30
Free chlorine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 5	53	97.0%	100%	1.17	0.56	2.84
Monochloramine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 4.1	n/a	97.0%	n/a	n/a	n/a	n/a
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	7	97.0%	100%	0.26	0.05	0.41
Nitrate	(mg / L as N)	Acute health	≤ 11	28	99.0%	100%	0.53	0.09	0.80
Nitrite	(mg / L as N)	Acute health	≤ 0.9	28	99.0%	100%	0.15	0.23	0.84
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	28	99.0%	100%	0.21	0.25	0.97
Residual disinfectant (4)	(mg / L as Cl <sub>2</sub> )	Operational	≥ 0.2	53	95.0%	94.34%	1.17	0.56	2.84
Sodium	(mg / L as Na)	Aesthetic	≤ 200	7	95.0%	100%	9.29	0.72	11.45
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	≤ 250	10	95.0%	100%	15.40	1.78	20.73
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	≤ 500	10	99.0%	100%	15.40	1.78	20.73
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	7	95.0%	100%	0.02	0.00	0.02
<b>Chemical Properties: Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	≤ 300	7	95.0%	100%	50.00	0.00	50.00
Antimony	(µg / L as Sb)	Chronic health	≤ 20	7	97.0%	100%	0.76	0.24	1.49
Arsenic	(µg / L as As)	Chronic health	≤ 10	5	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	7	97.0%	100%	34.29	4.46	47.67
Boron	(µg / L as B)	Chronic health	≤ 2400	7	97.0%	100%	7.64	4.38	20.78
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	5	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	7	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	7	97.0%	100%	8.00	0.00	8.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	10	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	7	97.0%	100%	21.43	14.16	63.92
Iron	(µg / L as Fe)	Aesthetic	≤ 300	7	95.0%	100%	21.43	14.16	63.92
Lead	(µg / L as Pb)	Chronic health	≤ 10	5	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	7	97.0%	100%	3.19	0.49	4.66
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	7	95.0%	100%	3.19	0.49	4.66
Mercury	(µg / L as Hg)	Chronic health	≤ 6	5	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	7	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	5	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	7	97.0%	100%	0.79	0.76	3.05
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	7	97.0%	100%	3.17	0.45	4.51
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	≤ 10	7	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	≤ 300	7	97.0%	100%	33.86	16.56	83.53
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	≤ 100	7	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	≤ 100	7	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	≤ 60	7	97.0%	100%	14.43	3.41	24.65
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	7	97.0%	100%	0.35	0.17	0.87
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	8	97.0%	100%	0.31	0.00	0.31
<b>For monitoring/reporting purposes only</b>									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	7	not applicable	100%	17.00	1.63	21.90
Hardness (7)	(mg / L as CaCO <sub>3</sub> )	Operational	≥ 20 to ≤ 200	7	not applicable	100%	63.71	5.31	79.66
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	7	not applicable	100%	6.13	0.35	7.18
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	7	not applicable	100%	2.86	0.11	3.20
<b>Rand Water Risk Determinands (RWRD) (6)</b>									
Odour	TON	RWRD	≤ 2	15	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	15	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%	98.96%

Notes  
 (1) Specification SANS 241 date of effect : 1 July 2016  
 (2) Measured at water treatment works exit points  
 (3) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)  
 (4) Residual disinfectant : Results from the chlorinated system = Free available chlorine  
 (5) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/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\*\*\*\*