



RAND WATER

Ngwathe Water Quality Report
1 Month

22 April 2021 to 21 May 2021

Date generated: 04 June 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	54	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	54	95.0%	100%	0	0.14	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	54	95.0%	100%	5	13.62	46
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	no data	no data	no data
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	no data	no data	no data
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	66	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	16	95.0%	87.50%	12.94	3.47	23.36
Conductivity	(mS / m)	Aesthetic	≤ 170	28	95.0%	100%	22.71	0.90	25.40
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	10	95.0%	100%	157.00	6.32	175.97
Turbidity	(NTU)	Operational	≤ 1	28	95.0%	100%	0.41	0.20	1.00
Turbidity	(NTU)	Aesthetic	≤ 5	28	95.0%	100%	0.41	0.20	1.00
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	28	95.0%	100%	8.13	0.15	8.58
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	28	95.0%	100%	0.11	0.05	0.27
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	5	95.0%	100%	19.20	2.68	27.25
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	54	97.0%	100%	1.36	0.78	3.70
Monochloramine	(mg / L as Cl ₂)	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	5	97.0%	100%	0.37	0.05	0.52
Nitrate	(mg / L as N)	Acute health	≤ 11	26	99.0%	100%	0.59	0.06	0.78
Nitrite	(mg / L as N)	Acute health	≤ 0.9	26	99.0%	100%	0.03	0.01	0.06
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	24	99.0%	100%	0.09	0.01	0.13
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	54	95.0%	79.63%	1.36	0.78	3.70
Sodium	(mg / L as Na)	Aesthetic	≤ 200	10	95.0%	100%	12.19	2.61	20.02
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	8	95.0%	100%	18.63	0.74	20.86
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	8	99.0%	100%	18.63	0.74	20.86
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	10	95.0%	100%	0.07	0.04	0.20
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	10	95.0%	100%	31.48	19.01	88.50
Antimony	(µg / L as Sb)	Chronic health	≤ 20	7	97.0%	100%	0.30	0.00	0.30
Arsenic	(µg / L as As)	Chronic health	≤ 10	7	97.0%	100%	2.91	3.48	13.35
Barium	(µg / L as Ba)	Chronic health	≤ 700	10	97.0%	100%	43.30	10.51	74.83
Boron	(µg / L as B)	Chronic health	≤ 2400	10	97.0%	100%	6.85	3.59	17.62
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	7	97.0%	100%	1.14	0.24	1.87
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	10	97.0%	100%	2.12	2.48	9.56
Copper	(µg / L as Cu)	Chronic health	≤ 2000	10	97.0%	100%	6.10	2.35	13.16
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	10	97.0%	100%	44.45	31.67	139.45
Iron	(µg / L as Fe)	Aesthetic	≤ 300	10	95.0%	100%	44.45	31.67	139.45
Lead	(µg / L as Pb)	Chronic health	≤ 10	7	97.0%	100%	3.71	2.93	12.50
Manganese	(µg / L as Mn)	Chronic health	≤ 400	10	97.0%	100%	2.04	1.56	6.72
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	10	95.0%	100%	2.04	1.56	6.72
Mercury	(µg / L as Hg)	Chronic health	≤ 6	7	97.0%	100%	1.00	0.34	2.02
Nickel	(µg / L as Ni)	Chronic health	≤ 70	10	97.0%	100%	2.72	2.03	8.80
Selenium	(µg / L as Se)	Chronic health	≤ 40	7	97.0%	100%	5.14	1.95	11.00
Uranium	(µg / L as U)	Chronic health	≤ 30	7	97.0%	100%	0.10	0.00	0.10
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	7	97.0%	100%	4.84	0.14	5.26
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	7	95.0%	100%	2.50	0.00	2.50
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	7	97.0%	100%	91.43	38.96	208.31
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	7	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	7	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	7	97.0%	100%	20.14	5.01	35.19
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	7	97.0%	100%	0.63	0.26	1.42
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	21	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	10	not applicable	100%	17.60	4.95	32.45
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	10	not applicable	100%	75.40	16.58	125.14
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	10	not applicable	100%	7.88	0.81	10.32
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	10	not applicable	100%	4.67	1.71	9.80
Rand Water Risk Determinands (RWRD) (6)									
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%	98.82%
Operational	95.0%	96.26%

- 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 chlorinated system = Free available chlorine
 - (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****