

Ngwathe Municipality Water Quality Report - 12 Month

23 May 2017 to 22 May 2018 Date generated: 01 June 2018

Determinand	Measurement units	Risk	Required compliance to SANS 241: 2015 standard (%)	SANS 241: 2015 standard limits (1)	No of results	Achieved Compliance to SANS 241: 2015 Spec(%)	Descriptive statistics		
							Mean	Standard Deviation	Mean + 3 standard deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	155	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	155	100.0%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	155	100.0%	0	2.02	6
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	183	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	183	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	809	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	16	100.0%	5.19	0.75	7.55
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	155	100.0%	19.70	1.56	23.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	16	100.0%	138.75	5.63	150.00
Turbidity	(NTU)	Operational	95.0%	≤1	153	100.0%	0.31	0.10	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	153	100.0%	0.31	0.10	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	154	100.0%	8.08	0.14	8.39
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	153	100.0%	0.06	0.06	0.40
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	17	100.0%	11.07	1.47	13.00
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	153	100.0%	0.82	0.42	2.20
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	not applicable	not applicable	not applicable	not applicable	not applicable
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	16	100.0%	0.20	0.06	0.38
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	155	100.0%	0.44	0.04	0.59
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	155	100.0%	0.03	0.02	0.10
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	155	100.0%	0.08	0.02	0.15
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.2 Free Chlorine	153	98.0%	0.82	0.42	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	16	100.0%	9.88	1.86	14.55
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	16	100.0%	13.75	1.06	15.85
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	16	100.0%	13.75	1.06	15.85
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	16	100.0%	0.02	0.00	0.02
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	16	100.0%	26.44	3.61	36.55
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	16	100.0%	0.60	0.33	1.64
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	16	100.0%	0.80	0.80	3.06
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	16	100.0%	31.50	9.64	53.05
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	16	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	16	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	16	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	16	100.0%	10.00	0.00	10.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	16	100.0%	5.05	0.20	5.68
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	16	100.0%	21.44	14.00	58.55
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	16	100.0%	21.44	14.00	58.55
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	16	100.0%	0.22	0.08	0.49
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	16	100.0%	10.00	0.00	10.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	16	100.0%	10.00	0.00	10.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	16	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	16	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	16	100.0%	1.10	1.53	5.84
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	16	100.0%	0.21	0.02	0.27
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	16	100.0%	3.72	0.40	4.20
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	16	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	16	100.0%	74.50	12.21	99.10
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	14	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	14	100.0%	2.15	1.03	3.74
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	14	100.0%	18.71	2.23	22.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	14	100.0%	0.59	0.07	0.71
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	186	100.0%	0.32	0.02	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	16	100.0%	17.06	3.02	23.55
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	16	100.0%	62.81	11.30	88.30
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	16	100.0%	5.84	1.33	8.86
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	16	100.0%	3.63	0.35	4.19
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	48	100.0%	1.01	0.06	1.21
Taste	FTN	RWRD	95.0%	≤2	48	100.0%	1.00	0.00	1.00

Risk	Required compliance to SANS 241: 2015 standard	Overall Compliance-SANS 241
Acute health microbiological	99.00%	100.00%
Acute health chemical	99.00%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	99.81%

- Notes:**
- (1) Specification date of effect : 1 July 2016
 - (2) Free chlorine : Results from chlorinated system
 - (3) Monochloramine : Chlorinated system has no monochloramine
 - (4) Residual disinfectant : Results from chlorinated system
 - (5) Measured at water treatment works exit points
 - (6) Customer request: Results not included in the risk indices compliance calculations
 - (7) (NO₂/0.9 + NO₃/11)
 - (8) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)