

Ngwathe Municipality Water Quality Report - 12 Month

23 January 2018 to 22 January 2019

Date generated: 11 February 2019

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	153	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	153	100.0%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	153	100.0%	0	1.92	6
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	191	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	191	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	841	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	14	100.0%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	152	100.0%	20.97	1.38	25.12
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	14	100.0%	145.71	7.56	168.39
Turbidity	(NTU)	Operational	95.0%	≤1	151	100.0%	0.31	0.08	0.55
Turbidity	(NTU)	Aesthetic	95.0%	≤5	151	100.0%	0.31	0.08	0.55
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	152	100.0%	8.12	0.16	8.62
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	150	100.0%	0.04	0.04	0.16
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	14	100.0%	12.06	1.80	17.45
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	153	100.0%	1.08	0.50	2.57
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	14	100.0%	0.21	0.04	0.34
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	152	100.0%	0.46	0.04	0.60
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	152	100.0%	0.03	0.02	0.09
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	152	100.0%	0.07	0.02	0.14
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.2 Free Chlorine	153	98.0%	1.08	0.50	2.57
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	14	100.0%	11.13	1.41	15.36
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	14	100.0%	14.71	1.64	19.63
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	14	100.0%	14.71	1.64	19.63
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	14	100.0%	0.09	0.26	0.88
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	14	100.0%	27.64	6.97	48.55
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	199	100.0%	0.59	0.41	1.81
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	14	100.0%	2.77	2.96	11.66
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	14	100.0%	42.64	5.84	60.16
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	14	100.0%	16.79	9.26	44.56
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	14	100.0%	1.86	0.69	3.93
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	14	100.0%	10.00	5.19	25.57
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	14	100.0%	9.00	1.04	12.11
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	14	100.0%	14.64	7.46	37.02
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	14	100.0%	24.50	18.37	79.61
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	14	100.0%	24.50	18.37	79.61
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	14	100.0%	2.46	3.10	11.75
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	14	100.0%	9.14	9.54	37.77
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	14	100.0%	9.14	9.54	37.77
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	199	100.0%	0.80	0.01	0.82
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	14	100.0%	7.50	2.59	15.28
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	14	100.0%	3.35	2.89	12.03
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	199	100.0%	0.39	0.29	1.25
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	14	100.0%	3.79	0.31	4.73
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	14	100.0%	4.00	1.04	7.11
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	14	100.0%	65.00	14.13	107.38
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	14	100.0%	5.25	4.93	20.04
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	14	100.0%	6.47	3.70	17.56
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	14	100.0%	18.43	2.62	26.30
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	14	100.0%	0.64	0.11	0.97
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	195	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	14	100.0%	17.71	2.89	26.39545138
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	14	100.0%	68.36	10.67	100.38
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	14	100.0%	6.99	1.05	10.14
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	14	100.0%	3.50	0.37	4.60
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	46	100.0%	1.02	0.08	1.26
Taste	FTN	RWRD	95.0%	≤2	46	100.0%	1.01	0.06	1.19

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)