

Ngwathe Municipality Water Quality Report - 12 Month

23 January 2017 to 22 January 2018

Date generated: 01 February 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	156	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	156	100.0%	0	0.11	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	155	100.0%	1	1.28	6
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	179	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	179	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	775	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	156	100.0%	19.56	1.66	23.45
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	16	100.0%	137.50	5.16	149.25
Turbidity	(NTU)	Operational	95.0%	≤1	154	100.0%	0.30	0.10	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	154	100.0%	0.30	0.10	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	155	100.0%	8.09	0.17	8.48
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	156	100.0%	0.06	0.06	0.40
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	17	100.0%	11.09	1.25	13.84
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	154	100.0%	0.68	0.42	1.88
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%	0.19	0.06	0.38
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	156	100.0%	0.48	0.08	0.67
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	156	100.0%	0.03	0.02	0.09
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	156	100.0%	0.08	0.02	0.14
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.2 Free Chlorine	154	94.2%	0.68	0.42	1.88
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	16	100.0%	8.58	0.76	9.49
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	16	100.0%	13.25	1.24	15.70
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	16	100.0%	13.25	1.24	15.70
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	16	100.0%	0.02	0.01	0.04
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	16	100.0%	26.31	3.63	36.55
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	14	100.0%	0.61	0.35	1.66
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	16	100.0%	0.68	0.47	1.56
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	16	100.0%	25.94	4.99	33.00
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%	22.71	18.94	67.95
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	16	100.0%	22.71	18.94	67.95
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	16	100.0%	0.21	0.05	0.37
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	14	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%	1.16	1.48	5.78
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	14	100.0%	0.20	0.00	0.20
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	16	100.0%	3.52	0.47	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	10.12	98.05
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%	1.89	1.05	4.31
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	14	100.0%	17.07	2.76	20.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	14	100.0%	0.56	0.08	0.67
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	179	100.0%	0.33	0.02	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	16	100.0%	17.00	3.44	25.25
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	16	100.0%	59.75	9.06	80.50
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	16	100.0%	4.98	0.50	5.86
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	16	100.0%	3.37	0.46	4.16
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	48	100.0%	1.00	0.00	1.00
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%	99.42%

- 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)