

Barrage Consumer Supply Water Quality Report (SANS 241) - 12 Month

21 July 2017 to 20 July 2018

Date generated: 03 August 2018

Determinand	Measurement units	Risk	Required compliance to SANS 0241 2015 standard (%)	SANS 0241:2015 standard limits (1)	No of results	Achieved Compliance to SANS0241: 2015 Spec(%)	Descriptive statistics		
							Mean	Std 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%	4	9.76	58
<i>Cryptosporidium spp</i>	(org / 10 Litre)	Acute health	99.0%	0	24	100.0%	0	0.00	0
<i>Giardia spp</i>	(org / 10 Litre)	Acute health	99.0%	0	24	100.0%	0	0.00	0
Somatic Coliphages	(count per 10 mL)	Operational	95.0%	0	52	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	20	100.0%	5.10	0.31	6.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	155	100.0%	72.92	13.39	93.46
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	20	100.0%	444.75	94.03	568.10
Turbidity	(NTU)	Operational	95.0%	≤1	155	98.7%	0.34	0.20	1.05
Turbidity	(NTU)	Aesthetic	95.0%	≤5	155	100.0%	0.34	0.20	1.05
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	155	100.0%	8.06	0.11	8.30
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	155	100.0%	0.05	0.00	0.05
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	20	100.0%	56.60	15.65	80.81
Free chlorine	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	155	100.0%	1.70	0.38	2.20
Monochloramine	(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	20	100.0%	0.20	0.02	0.24
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	155	100.0%	3.38	1.20	5.75
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	155	100.0%	0.03	0.00	0.03
Combined nitrate plus nitrite (2)	(mg / L as N)	Acute health	99.0%	≤1	155	100.0%	0.34	0.11	0.56
Residual disinfectant	(mg / L)	Operational	95.0%	≥0.2 Chlorinated system	155	100.0%	1.70	0.38	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	20	100.0%	53.74	18.14	73.00
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	20	100.0%	153.20	50.20	214.05
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	20	100.0%	153.20	50.20	214.05
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	20	100.0%	0.03	0.01	0.06
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	20	100.0%	31.95	8.79	48.81
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	20	100.0%	0.88	1.40	5.67
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	20	100.0%	2.21	2.19	6.36
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	20	100.0%	34.40	8.22	45.81
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	20	100.0%	72.25	26.90	109.05
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	20	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	20	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	20	100.0%	10.00	0.00	10.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	20	100.0%	8.00	6.16	20.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	20	100.0%	17.44	6.55	29.86
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	20	100.0%	17.44	6.55	29.86
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	20	100.0%	0.71	1.45	5.59
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	20	100.0%	10.70	2.27	18.48
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	20	100.0%	10.70	2.27	18.48
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	20	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	20	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	20	100.0%	1.65	1.42	4.92
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	20	100.0%	1.70	1.18	3.48
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	20	100.0%	3.93	0.66	5.02
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	20	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	20	100.0%	32.20	12.55	53.05
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	20	100.0%	0.56	0.17	1.08
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	20	100.0%	9.43	2.16	12.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	20	100.0%	18.56	5.47	26.43
Combined trihalomethanes (3)	(µg / L)	Chronic health	97.0%	≤1	20	100.0%	0.52	0.15	0.74
Total Mycrocystin	(µg / L)	Chronic health	97.0%	≤0.7	12	100.0%	0.31	0.00	0.31

Water quality risk indices

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%	99.76%

Notes:

- (1) Specification date of effect : 1 July 2016
- (2) (NO₂/0.9 + NO₃/11)
- (3) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)