



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

24 October 2016 to 23 October 2017

Date generated: 02 November 2017

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	416	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	416	99.8%	0	4.66	2
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	387	98.7%	38	291.97	1375
<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	53	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	71	100.0%	5.13	0.58	7.60
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	414	100.0%	70.26	18.02	93.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	187	100.0%	457.59	93.30	571.40
Turbidity	(NTU)	Operational	95.0%	≤1	409	98.5%	0.39	1.16	2.16
Turbidity	(NTU)	Aesthetic	95.0%	≤5	409	99.5%	0.39	1.16	2.16
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	414	100.0%	8.00	0.13	8.27
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	208	100.0%	0.05	0.00	0.05
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	72	100.0%	54.71	14.23	82.45
Free chlorine	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	416	100.0%	1.82	0.43	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	74	100.0%	0.20	0.05	0.39
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	208	100.0%	3.47	1.17	5.20
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	208	100.0%	0.03	0.03	0.10
Combined nitrate plus nitrite (2)	(mg / L as N)	Acute health	99.0%	≤1	208	100.0%	0.35	0.11	0.52
Residual disinfectant	(mg / L)	Operational	95.0%	≥0.2 Chlorinated system	416	100.0%	1.82	0.43	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	71	100.0%	55.32	14.27	80.00
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	74	98.6%	144.38	49.88	230.65
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	74	100.0%	144.38	49.88	230.65
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	71	100.0%	0.06	0.03	0.15
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	71	100.0%	28.54	17.45	85.90
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	30	100.0%	0.55	0.08	0.74
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	30	100.0%	1.97	1.14	4.14
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	71	100.0%	34.37	10.61	60.20
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	71	100.0%	75.17	16.45	101.50
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	30	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	71	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	71	100.0%	10.11	0.95	12.40
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	67	100.0%	5.25	1.95	10.77
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	71	100.0%	28.01	21.60	112.80
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	71	100.0%	28.01	21.60	112.80
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	30	100.0%	0.43	0.67	2.98
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	71	100.0%	13.30	9.78	50.80
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	71	100.0%	13.30	9.78	50.80
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	30	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	71	100.0%	10.38	0.90	13.30
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	30	100.0%	2.03	1.39	5.03
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	30	100.0%	1.96	1.48	5.63
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	30	100.0%	4.16	0.53	5.51
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	30	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	30	100.0%	36.60	21.97	83.26
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	30	100.0%	0.64	0.25	1.20
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	30	100.0%	9.02	2.95	15.13
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	30	100.0%	19.03	4.80	32.13
Combined trihalomethanes (3)	(µg / L)	Chronic health	97.0%	≤1	30	100.0%	0.54	0.15	0.95
Total Mycrocystin	(µg / L)	Chronic health	97.0%	≤0.7	12	100.0%	0.34	0.02	0.36
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%	99.83%							
Operational	95.00%	99.45%							
Notes:									
(1) Specification date of effect : 1 July 2016									
(2) (NO ₂ /0.9 + NO ₃ /11)									
(3) (CHCl ₃ /300 + CHBr ₃ /100 + CHBr ₂ Cl/100 + CHBrCl ₂ /60)									