



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

October 2016 to September 2017

Date generated: 03 October 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	403	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	403	99.8%	0	4.74	2
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	402	98.8%	40	288.95	1244
<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	51	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	69	100.0%	5.13	0.59	7.64
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	401	100.0%	70.00	18.32	95.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	165	100.0%	448.67	95.61	573.60
Turbidity	(NTU)	Operational	95.0%	≤1	394	98.5%	0.39	1.18	2.24
Turbidity	(NTU)	Aesthetic	95.0%	≤5	394	99.5%	0.39	1.18	2.24
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	401	100.0%	7.99	0.13	8.27
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	200	100.0%	0.05	0.00	0.06
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	70	100.0%	58.36	27.42	155.00
Free chlorine	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	403	100.0%	1.80	0.46	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	72	100.0%	0.20	0.06	0.39
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	200	100.0%	3.40	1.17	5.20
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	200	100.0%	0.03	0.03	0.10
Combined nitrate plus nitrite (2)	(mg / L as N)	Acute health	99.0%	≤1	200	100.0%	0.35	0.11	0.52
Residual disinfectant	(mg / L)	Operational	95.0%	≥0.2 Chlorinated system	403	100.0%	1.80	0.46	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	69	100.0%	55.52	14.95	80.00
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	72	98.6%	138.18	48.62	232.55
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	72	100.0%	138.18	48.62	232.55
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	69	100.0%	0.06	0.03	0.16
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	69	100.0%	28.64	17.69	88.16
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	30	100.0%	0.53	0.07	0.74
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	30	100.0%	1.69	0.83	2.98
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	69	100.0%	33.91	10.92	60.28
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	69	100.0%	75.32	16.62	101.60
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	69	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	69	100.0%	10.30	1.83	19.60
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	66	100.0%	5.25	1.97	10.92
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	69	100.0%	28.87	22.59	113.72
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	69	100.0%	28.87	22.59	113.72
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	30	100.0%	0.49	0.67	2.98
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	69	100.0%	14.22	10.45	51.12
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	69	100.0%	14.22	10.45	51.12
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	69	100.0%	10.70	1.28	14.32
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	30	100.0%	2.00	1.38	5.03
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	30	100.0%	2.55	2.52	8.38
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	30	100.0%	4.44	1.00	6.93
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%	36.40	22.56	83.26
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	30	100.0%	0.72	0.30	1.30
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	30	100.0%	9.26	3.39	16.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	30	100.0%	18.83	5.05	32.13
Combined trihalomethanes (3)	(µg / L)	Chronic health	97.0%	≤1	30	100.0%	0.53	0.16	0.95
Total Mycrocystin	(µg / L)	Chronic health	97.0%	≤0.7	12	100.0%	0.35	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%	99.82%							
Operational	95.00%	99.43%							
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)									