



							Descriptive Statistics		
Determinands	Measurement Units	Risks	SANS 241:2015 standard limits (1)	No of results	Required compliances to SANS 241:2015 spec(%)	Achieved compliances to SANS 241:2015 spec(%)	Mean	Standard Deviation	Mean + 3 Std deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	623	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	623	95.0%	99.84%	0	1.41	4
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	623	95.0%	100%	1	3.00	10
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	208	99.0%	99.04%	0	0.10	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	208	99.0%	98.56%	0	0.12	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	898	95.0%	99.89%	0	0.03	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	67	95.0%	100%	5.06	0.24	5.78
Conductivity	(mS / m)	Aesthetic	≤ 170	301	95.0%	100%	21.71	3.04	30.82
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	66	95.0%	100%	151.67	18.00	205.68
Turbidity	(NTU)	Operational	≤ 1	301	95.0%	100%	0.28	0.05	0.44
Turbidity	(NTU)	Aesthetic	≤ 5	301	95.0%	100%	0.28	0.05	0.44
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	301	95.0%	100%	7.99	0.16	8.48
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	305	95.0%	100%	0.04	0.07	0.25
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	32	95.0%	100%	12.67	2.79	21.03
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	623	97.0%	100%	1.47	0.41	2.70
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	n/a	97.0%	n/a	n/a	n/a	n/a
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	32	97.0%	100%	0.29	0.07	0.51
Nitrate	(mg / L as N)	Acute health	≤ 11	307	99.0%	100%	0.51	0.04	0.63
Nitrite	(mg / L as N)	Acute health	≤ 0.9	305	99.0%	100%	0.01	0.01	0.06
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	306	99.0%	100%	0.15	0.22	0.80
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	623	95.0%	99.84%	1.47	0.41	2.70
Sodium	(mg / L as Na)	Aesthetic	≤ 200	72	95.0%	100%	10.56	1.98	16.49
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	71	95.0%	100%	17.79	4.33	30.79
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	71	99.0%	100%	17.79	4.33	30.79
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	72	95.0%	100%	0.02	0.02	0.07
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	72	95.0%	100%	29.21	7.82	52.68
Antimony	(µg / L as Sb)	Chronic health	≤ 20	30	97.0%	100%	0.62	0.11	0.95
Arsenic	(µg / L as As)	Chronic health	≤ 10	32	97.0%	100%	3.01	3.23	12.69
Barium	(µg / L as Ba)	Chronic health	≤ 700	72	97.0%	100%	42.14	6.67	62.16
Boron	(µg / L as B)	Chronic health	≤ 2400	72	97.0%	100%	8.68	3.06	17.85
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	32	97.0%	100%	1.16	0.28	1.99
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	72	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	72	97.0%	100%	8.51	1.90	14.21
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	67	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	72	97.0%	100%	23.84	19.41	82.07
Iron	(µg / L as Fe)	Aesthetic	≤ 300	72	95.0%	100%	23.84	19.41	82.07
Lead	(µg / L as Pb)	Chronic health	≤ 10	32	97.0%	100%	3.69	2.74	11.91
Manganese	(µg / L as Mn)	Chronic health	≤ 400	72	97.0%	100%	3.11	0.51	4.65
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	72	95.0%	100%	3.11	0.51	4.65
Mercury	(µg / L as Hg)	Chronic health	≤ 6	32	97.0%	100%	1.04	0.34	2.05
Nickel	(µg / L as Ni)	Chronic health	≤ 70	72	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	32	97.0%	100%	5.13	1.82	10.60
Uranium	(µg / L as U)	Chronic health	≤ 30	30	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	32	97.0%	100%	3.81	0.63	5.69
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	32	95.0%	100%	3.00	0.02	3.06
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	44	97.0%	100%	30.52	20.43	91.80
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	44	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	44	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	44	97.0%	100%	13.98	4.70	28.07
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	44	97.0%	100%	0.33	0.19	0.88
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	207	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	72	not applicable	100%	16.88	1.80	22.27
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	72	not applicable	100%	66.88	7.18	88.41
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	72	not applicable	100%	7.13	0.92	9.89
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	72	not applicable	100%	3.26	0.51	4.78
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	68	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	68	not applicable	100%	1.00	0.00	1.00

Water quality risk indices

Risks	Required compliances to SANS 241: 2015 standard	Overall Compliances - SANS 241: 2015 standard
Acute health microbiological	99.0%	99.52%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	99.91%

- Notes
- (1) Specification_SANS 241 date of effect : 1 July 2016
 - (2) Measured at water treatment works exit points
 - (3) (NO2/0.9 + NO3/11)
 - (4) Residual disinfectant : Results from the chlorinated system = Free available chlorine
 - (5) (CHCl3/300 + CHBr3/100 + CHBr2Cl/100 + CHBrCl2/60)
 - (6) Customer request: Results not included in the risk indices compliance calculations and limits based on SANS 241:2006
 - (7) Customer request: Results not included in the risk indices compliance calculations and limits based on RW Internal Spec