



RAND WATER
Customer Bulk Water Quality Report
1 Month

23 May 2020 to 19 June 2020

Date generated: 14 July 2020

							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	1,195	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	1,195	95.0%	100%	0	0.27	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	1,195	95.0%	99.75%	9	123.80	380
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	19	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	19	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	91	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	107	95.0%	100%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	≤ 170	944	95.0%	100%	24.33	7.91	48.07
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	117	95.0%	100%	179.15	67.55	381.80
Turbidity	(NTU)	Operational	≤ 1	990	95.0%	99.90%	0.30	0.08	0.53
Turbidity	(NTU)	Aesthetic	≤ 5	990	95.0%	100%	0.30	0.08	0.53
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	944	95.0%	100%	7.96	0.14	8.38
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	942	95.0%	100%	0.20	0.16	0.69
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	137	95.0%	100%	16.81	18.74	73.03
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	1,194	97.0%	100%	0.43	0.56	2.10
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	849	97.0%	100%	1.21	0.63	3.10
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	129	97.0%	100%	0.28	0.09	0.56
Nitrate	(mg / L as N)	Acute health	≤ 11	940	99.0%	100%	0.61	0.13	1.00
Nitrite	(mg / L as N)	Acute health	≤ 0.9	940	99.0%	100%	0.04	0.06	0.22
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	927	99.0%	100%	0.13	0.15	0.59
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ (0.1 and 0.2)	1,194	95.0%	98.16%	1.28	0.56	2.98
Sodium	(mg / L as Na)	Aesthetic	≤ 200	113	95.0%	100%	15.32	12.67	53.34
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	140	95.0%	100%	23.43	11.63	58.31
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	140	99.0%	100%	23.43	11.63	58.31
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	113	95.0%	100%	0.02	0.00	0.03
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	113	95.0%	100%	27.58	9.91	57.31
Antimony	(µg / L as Sb)	Chronic health	≤ 20	no data	97.0%	no data	.	no data	.
Arsenic	(µg / L as As)	Chronic health	≤ 10	104	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	113	97.0%	100%	49.38	6.65	69.32
Boron	(µg / L as B)	Chronic health	≤ 2400	113	97.0%	100%	13.69	9.36	41.77
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	104	97.0%	100%	1.61	0.23	2.30
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	113	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	113	97.0%	100%	9.15	3.56	19.83
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	103	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	113	97.0%	100%	22.50	20.44	83.83
Iron	(µg / L as Fe)	Aesthetic	≤ 300	113	95.0%	100%	22.50	20.44	83.83
Lead	(µg / L as Pb)	Chronic health	≤ 10	104	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	113	97.0%	100%	3.31	2.19	9.88
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	113	95.0%	100%	3.31	2.19	9.88
Mercury	(µg / L as Hg)	Chronic health	≤ 6	104	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	113	97.0%	100%	5.03	0.31	5.96
Selenium	(µg / L as Se)	Chronic health	≤ 40	104	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	no data	97.0%	no data	.	no data	.
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	101	97.0%	100%	4.41	0.39	5.59
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	96	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	116	97.0%	100%	31.09	9.45	59.45
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	116	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	116	97.0%	100%	10.23	1.43	14.52
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	116	97.0%	100%	15.96	2.89	24.64
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	116	97.0%	100%	0.40	0.10	0.70
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	22	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	113	not applicable	100%	19.72	6.10	38.02
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	113	not applicable	99.12%	80.10	26.98	161.03
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	113	not applicable	100%	8.90	3.77	20.21
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	113	not applicable	100%	4.13	1.47	8.54
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	354	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	354	not applicable	100%	1.00	0.00	1.00

Risks	Required compliances to SANS 241: 2015 standard	Overall Compliances - SANS 241: 2015 standard
Acute health microbiological	99.0%	100%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	99.55%

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 both the chlorinated and chloraminated systems
 (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
 **** Determinands with no data are due to instrument breakdown****