



RAND WATER
Customer Bulk Water Quality Report
1 Month

22 April 2020 to 22 May 2020

Date generated: 08 June 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	1,365	99.0%	99.93%	0	0.38	1
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	1,365	95.0%	99.19%	1	6.76	21
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	1,365	95.0%	99.71%	10	101.40	314
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	21	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	21	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	98	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	165	95.0%	100%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	≤ 170	1,083	95.0%	100%	23.51	6.63	43.39
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	173	95.0%	100%	167.86	54.04	329.97
Turbidity	(NTU)	Operational	≤ 1	1,088	95.0%	100%	0.28	0.05	0.43
Turbidity	(NTU)	Aesthetic	≤ 5	1,088	95.0%	100%	0.28	0.05	0.43
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	1,083	95.0%	100%	7.96	0.13	8.34
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	1,081	95.0%	100%	0.12	0.13	0.52
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	167	95.0%	100%	19.83	21.15	83.29
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	1,363	97.0%	100%	0.40	0.51	1.92
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	966	97.0%	100%	1.08	0.65	3.04
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	167	97.0%	100%	0.37	0.09	0.65
Nitrate	(mg / L as N)	Acute health	≤ 11	1,079	99.0%	100%	0.61	0.14	1.04
Nitrite	(mg / L as N)	Acute health	≤ 0.9	1,079	99.0%	100%	0.04	0.05	0.19
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	1,066	99.0%	100%	0.10	0.06	0.29
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ (0.1 and 0.2)	1,363	95.0%	96.70%	1.15	0.61	2.97
Sodium	(mg / L as Na)	Aesthetic	≤ 200	174	95.0%	100%	14.99	12.14	51.43
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	170	95.0%	100%	24.78	10.34	55.79
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	170	99.0%	100%	24.78	10.34	55.79
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	174	95.0%	100%	0.02	0.00	0.03
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	174	95.0%	100%	27.00	7.17	48.51
Antimony	(µg / L as Sb)	Chronic health	≤ 20	no data	97.0%	no data	.	no data	.
Arsenic	(µg / L as As)	Chronic health	≤ 10	151	97.0%	100%	4.17	3.54	14.78
Barium	(µg / L as Ba)	Chronic health	≤ 700	174	97.0%	100%	46.94	10.37	78.04
Boron	(µg / L as B)	Chronic health	≤ 2400	174	97.0%	100%	11.79	8.78	38.14
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	151	97.0%	100%	1.28	0.28	2.12
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	174	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	174	97.0%	100%	10.33	4.96	25.20
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	165	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	174	97.0%	100%	18.06	16.97	68.96
Iron	(µg / L as Fe)	Aesthetic	≤ 300	174	95.0%	100%	18.06	16.97	68.96
Lead	(µg / L as Pb)	Chronic health	≤ 10	151	97.0%	100%	4.75	2.99	13.72
Manganese	(µg / L as Mn)	Chronic health	≤ 400	174	97.0%	100%	3.87	3.01	12.89
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	174	95.0%	100%	3.87	3.01	12.89
Mercury	(µg / L as Hg)	Chronic health	≤ 6	172	97.0%	100%	1.17	0.35	2.22
Nickel	(µg / L as Ni)	Chronic health	≤ 70	174	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	151	97.0%	100%	5.83	2.00	11.83
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	161	97.0%	100%	3.77	0.19	4.34
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	150	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	175	97.0%	100%	38.93	14.47	82.33
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	175	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	175	97.0%	100%	10.45	2.14	16.86
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	175	97.0%	100%	17.80	3.42	28.06
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	175	97.0%	100%	0.47	0.12	0.81
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	33	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	174	not applicable	100%	18.66	4.66	32.65
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	174	not applicable	100%	77.51	25.09	152.77
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	174	not applicable	100%	8.90	3.93	20.70
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	174	not applicable	100%	3.97	1.36	8.04
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	399	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	399	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%	99.93%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	99.08%

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****