



RAND WATER
Barrage Water Quality Report
1 Month

23 January 2021 to 19 February 2021

Date generated: 12 March 2021

							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	32	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	32	95.0%	93.75%	13	49.43	161
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	32	95.0%	100%	12	35.58	119
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	2	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	2	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	4	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	9	95.0%	100%	8.22	1.86	13.79
Conductivity	(mS / m)	Aesthetic	≤ 170	32	95.0%	100%	23.66	2.91	32.40
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	21	95.0%	100%	166.43	16.82	216.88
Turbidity	(NTU)	Operational	≤ 1	32	95.0%	71.88%	1.65	4.47	15.06
Turbidity	(NTU)	Aesthetic	≤ 5	32	95.0%	96.88%	1.65	4.47	15.06
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	32	95.0%	100%	8.06	0.14	8.47
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	64	95.0%	100%	0.10	0.01	0.14
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	5	95.0%	100%	15.00	2.92	23.75
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	32	97.0%	100%	1.10	0.60	2.91
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	n/a	97.0%	no data	n/a	n/a	n/a
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	11	97.0%	100%	0.20	0.00	0.20
Nitrate	(mg / L as N)	Acute health	≤ 11	64	99.0%	100%	0.64	0.13	1.03
Nitrite	(mg / L as N)	Acute health	≤ 0.9	69	99.0%	100%	0.04	0.04	0.16
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	57	99.0%	100%	0.21	0.24	0.94
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	32	95.0%	93.75%	1.10	0.60	2.91
Sodium	(mg / L as Na)	Aesthetic	≤ 200	8	95.0%	100%	14.25	2.60	22.06
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	5	95.0%	100%	14.20	0.84	16.71
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	5	99.0%	100%	14.20	0.84	16.71
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	7	95.0%	100%	0.01	0.01	0.04
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	9	95.0%	100%	14.46	11.48	48.88
Antimony	(µg / L as Sb)	Chronic health	≤ 20	2	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	2	97.0%	100%	0.80	0.00	0.80
Barium	(µg / L as Ba)	Chronic health	≤ 700	9	97.0%	100%	49.89	11.74	85.11
Boron	(µg / L as B)	Chronic health	≤ 2400	9	97.0%	100%	9.26	9.12	36.62
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	2	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	9	97.0%	100%	0.56	0.17	1.06
Copper	(µg / L as Cu)	Chronic health	≤ 2000	9	97.0%	100%	4.58	3.67	15.60
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	5	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	8	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	8	95.0%	100%	100.00	0.00	100.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	2	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	8	97.0%	100%	6.06	9.70	35.15
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	8	95.0%	100%	6.06	9.70	35.15
Mercury	(µg / L as Hg)	Chronic health	≤ 6	2	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	9	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	2	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	2	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	2	97.0%	100%	3.40	0.00	3.40
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	2	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	2	97.0%	100%	115.00	7.07	136.21
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	2	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	2	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	2	97.0%	100%	18.50	0.71	20.62
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	2	97.0%	100%	0.71	0.04	0.84
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	no data	97.0%	no data	no data	no data	no data
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	9	not applicable	100%	22.44	5.83	39.94
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	9	not applicable	100%	95.33	37.40	207.54
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	9	not applicable	100%	9.62	6.24	28.34
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	8	not applicable	100%	4.43	1.06	7.62
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	16	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	16	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%	99.50%
Operational	95.0%	92.49%

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
 **** Determinands with no data are due to instrument breakdown****