



RAND WATER
Ekurhuleni Water Quality Report
1 Month

22 August 2020 to 21 September 2020

Date generated: 09 October 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	277	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	277	95.0%	100%	0	0.30	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	277	95.0%	100%	2	13.20	42
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	93.75%	0	0.50	2
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	64	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	18	95.0%	100%	6.94	1.30	10.86
Conductivity	(mS / m)	Aesthetic	≤ 170	158	95.0%	100%	20.66	1.96	26.54
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	25	95.0%	100%	142.40	5.80	159.79
Turbidity	(NTU)	Operational	≤ 1	175	95.0%	100%	0.28	0.05	0.41
Turbidity	(NTU)	Aesthetic	≤ 5	175	95.0%	100%	0.28	0.05	0.41
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	156	95.0%	100%	8.06	0.13	8.45
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	148	95.0%	100%	0.28	0.13	0.68
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	22	95.0%	100%	11.45	0.67	13.47
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	277	97.0%	100%	0.22	0.34	1.25
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	235	97.0%	100%	1.74	0.46	3.13
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	22	97.0%	100%	0.20	0.00	0.20
Nitrate	(mg / L as N)	Acute health	≤ 11	149	99.0%	100%	0.65	0.16	1.11
Nitrite	(mg / L as N)	Acute health	≤ 0.9	154	99.0%	100%	0.03	0.08	0.26
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	144	99.0%	100%	0.17	0.20	0.77
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ (0.1 and 0.2)	277	95.0%	98.56%	1.67	0.50	3.17
Sodium	(mg / L as Na)	Aesthetic	≤ 200	19	95.0%	100%	9.77	0.92	12.52
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	22	95.0%	100%	16.86	0.89	19.53
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	22	99.0%	100%	16.86	0.89	19.53
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	19	95.0%	100%	0.02	0.00	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	19	95.0%	100%	33.05	16.39	82.23
Antimony	(µg / L as Sb)	Chronic health	≤ 20	18	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	18	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	19	97.0%	100%	38.11	4.14	50.51
Boron	(µg / L as B)	Chronic health	≤ 2400	19	97.0%	100%	7.01	2.38	14.16
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	18	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	19	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	19	97.0%	100%	8.49	1.50	12.99
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	18	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	19	97.0%	100%	41.37	64.34	234.40
Iron	(µg / L as Fe)	Aesthetic	≤ 300	19	95.0%	100%	41.37	64.34	234.40
Lead	(µg / L as Pb)	Chronic health	≤ 10	18	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	19	97.0%	100%	4.48	5.53	21.08
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	19	95.0%	100%	4.48	5.53	21.08
Mercury	(µg / L as Hg)	Chronic health	≤ 6	18	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	19	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	18	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	18	97.0%	100%	0.53	0.08	0.77
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	18	97.0%	100%	4.50	0.47	5.90
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	21	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	18	97.0%	100%	33.00	3.93	44.78
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	18	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	18	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	18	97.0%	100%	15.11	1.08	18.35
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	18	97.0%	100%	0.39	0.03	0.46
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	16	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	19	not applicable	100%	19.11	2.05	25.26
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	19	not applicable	100%	70.58	7.02	91.63
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	19	not applicable	100%	6.58	0.64	8.49
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	19	not applicable	100%	3.06	0.24	3.79
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	50	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	50	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%	99.68%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	99.68%

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 chloraminated system = Sum of Free and Monochloramine
(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****