



RAND WATER

Emfuleni Water Quality Report
1 Month

23 March 2021 to 21 April 2021

Date generated: 14 May 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	85	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	85	95.0%	100%	0	0.33	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	85	95.0%	100%	1	4.96	16
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	no data	no data	no data
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	no data	no data	no data
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	84	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	4	95.0%	100%	9.00	3.65	19.95
Conductivity	(mS / m)	Aesthetic	≤ 170	58	95.0%	100%	23.57	2.21	30.20
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	4	95.0%	100%	161.25	4.79	175.61
Turbidity	(NTU)	Operational	≤ 1	58	95.0%	100%	0.31	0.11	0.63
Turbidity	(NTU)	Aesthetic	≤ 5	58	95.0%	100%	0.31	0.11	0.63
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	58	95.0%	100%	8.06	0.23	8.75
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	59	95.0%	100%	0.10	0.00	0.10
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	2	95.0%	100%	17.00	2.83	25.49
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	85	97.0%	100%	1.20	0.53	2.79
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	2	97.0%	100%	0.28	0.04	0.38
Nitrate	(mg / L as N)	Acute health	≤ 11	57	99.0%	100%	0.70	0.12	1.07
Nitrite	(mg / L as N)	Acute health	≤ 0.9	57	99.0%	100%	0.03	0.02	0.11
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	58	99.0%	100%	0.10	0.03	0.18
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	85	95.0%	94.12%	1.20	0.53	2.79
Sodium	(mg / L as Na)	Aesthetic	≤ 200	5	95.0%	100%	7.36	0.74	9.59
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	5	95.0%	100%	18.20	2.49	25.67
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	5	99.0%	100%	18.20	2.49	25.67
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	4	95.0%	100%	0.08	0.05	0.22
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	5	95.0%	100%	9.58	4.74	23.81
Antimony	(µg / L as Sb)	Chronic health	≤ 20	2	97.0%	100%	0.45	0.21	1.09
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	5	97.0%	100%	37.40	5.77	54.71
Boron	(µg / L as B)	Chronic health	≤ 2400	5	97.0%	100%	3.08	1.03	6.18
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	5	97.0%	100%	0.26	0.13	0.66
Copper	(µg / L as Cu)	Chronic health	≤ 2000	5	97.0%	100%	1.52	0.57	3.23
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	4	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	5	97.0%	100%	34.80	36.89	145.48
Iron	(µg / L as Fe)	Aesthetic	≤ 300	5	95.0%	100%	34.80	36.89	145.48
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	5	97.0%	100%	1.04	0.65	3.00
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	5	95.0%	100%	1.04	0.65	3.00
Mercury	(µg / L as Hg)	Chronic health	≤ 6	2	97.0%	100%	0.45	0.49	1.93
Nickel	(µg / L as Ni)	Chronic health	≤ 70	5	97.0%	100%	2.57	2.36	9.65
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%	0.30	0.28	1.15
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	2	97.0%	100%	4.85	0.35	5.91
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	2	95.0%	100%	2.50	0.00	2.50
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	7	97.0%	100%	60.14	20.73	122.34
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	7	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	7	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	7	97.0%	100%	15.29	3.55	25.92
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	7	97.0%	100%	0.46	0.13	0.86
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	25	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	5	not applicable	100%	11.92	1.98	17.87
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	5	not applicable	100%	50.40	7.50	72.91
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	5	not applicable	100%	4.94	0.63	6.84
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	5	not applicable	100%	2.76	0.36	3.85
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	4	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	4	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%	98.91%

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