

Victor Khanye Municipality (Delmas System) Water Quality Report - 12 Month

21 July 2017 to 20 July 2018 Date generated: 03 August 2018

Determinand	Measurement units	Risk	Required compliance to SANS 241: 2015 standard (%)	SANS 241: 2015 standard limits (1)	No of results	Achieved Compliance to SANS 241: 2015 Spec(%)	Descriptive statistics		
							Mean	Standard Deviation	Mean + 3 standard deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	255	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	255	100.0%	0	0.26	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	255	100.0%	4	22.05	62
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	185	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	185	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	800	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	28	100.0%	5.21	0.57	7.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	255	100.0%	19.91	1.53	23.46
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	28	100.0%	140.71	9.10	160.95
Turbidity	(NTU)	Operational	95.0%	≤1	254	100.0%	0.32	0.08	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	254	100.0%	0.32	0.08	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	255	100.0%	7.91	0.15	8.31
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	254	100.0%	0.29	0.15	0.50
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	28	100.0%	10.75	1.01	12.73
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	255	100.0%	0.11	0.20	1.31
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	255	100.0%	1.09	0.53	1.85
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	27	100.0%	0.19	0.00	0.19
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	255	100.0%	0.45	0.04	0.51
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	255	100.0%	0.09	0.09	0.33
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	255	100.0%	0.14	0.10	0.40
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	255	100.0%	1.20	0.53	1.98
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	28	100.0%	9.00	0.92	10.00
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	27	100.0%	14.11	1.19	16.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	27	100.0%	14.11	1.19	16.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	28	100.0%	0.02	0.00	0.02
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	28	100.0%	41.32	14.87	81.92
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	28	100.0%	0.51	0.06	0.73
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	28	100.0%	1.08	1.02	4.37
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	28	100.0%	37.43	6.93	49.00
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	28	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	28	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	28	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	28	100.0%	10.00	0.00	10.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	28	100.0%	7.68	5.85	20.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	28	100.0%	16.00	10.08	42.68
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	28	100.0%	16.00	10.08	42.68
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	28	100.0%	0.51	0.52	1.90
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	28	100.0%	10.00	0.00	10.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	28	100.0%	10.00	0.00	10.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	28	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	28	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	28	100.0%	0.95	1.20	5.40
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	28	100.0%	0.33	0.51	2.31
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	28	100.0%	3.80	0.44	5.02
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	36	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	28	100.0%	40.89	8.92	55.00
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	28	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	28	100.0%	1.51	0.99	3.30
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	28	100.0%	13.18	2.78	16.73
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	28	100.0%	0.38	0.07	0.46
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	189	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	28	100.0%	18.11	2.74	22
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	28	100.0%	67.18	8.24	77.46
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	28	100.0%	6.38	0.76	7.72
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	28	100.0%	3.76	0.36	4.47
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	96	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	96	100.0%	1.00	0.00	1.00

Risk	Required compliance to SANS 241: 2015 standard	Overall Compliance-SANS 241
Acute health microbiological	99.00%	100.00%
Acute health chemical	99.00%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	100.00%

- Notes:**
- (1) Specification date of effect : 1 July 2016
 - (2) Free chlorine : Results from chloraminated system
 - (3) Monochloramine : Results are from the chloraminated systems
 - (4) Residual disinfectant : Results from chloraminated system
 - (5) Measured at water treatment works exit points
 - (6) Customer request: Results not included in the risk indices compliance calculations
 - (7) (NO₂/0.9 + NO₃/11)
 - (8) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)