

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

23 October 2017 to 22 October 2018

Date generated: 05 November 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	261	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	261	100.0%	0	0.25	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	261	100.0%	3	21.81	69
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	189	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	189	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	817	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	29	100.0%	5.45	0.83	7.93
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	261	100.0%	20.36	1.62	25.21
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	29	100.0%	140.34	8.86	166.92
Turbidity	(NTU)	Operational	95.0%	≤1	260	100.0%	0.31	0.08	0.54
Turbidity	(NTU)	Aesthetic	95.0%	≤5	260	100.0%	0.31	0.08	0.54
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	261	100.0%	7.96	0.16	8.45
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	260	100.0%	0.29	0.15	0.74
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	29	100.0%	10.89	0.83	13.37
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	261	100.0%	0.10	0.14	0.51
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	261	100.0%	1.12	0.52	2.68
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	28	100.0%	0.19	0.00	0.20
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	260	100.0%	0.45	0.04	0.57
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	261	100.0%	0.09	0.09	0.35
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	237	100.0%	0.14	0.10	0.45
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	261	100.0%	1.21	0.52	2.78
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	29	100.0%	9.22	0.75	11.47
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	27	100.0%	14.44	1.09	17.70
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	27	100.0%	14.44	1.09	17.70
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	29	100.0%	0.08	0.25	0.85
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	29	100.0%	40.97	13.87	82.58
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	28	100.0%	0.46	0.18	0.99
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	29	100.0%	2.03	2.63	9.93
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	29	100.0%	41.86	6.41	61.10
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	29	100.0%	21.61	6.84	42.12
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	29	100.0%	2.26	0.49	3.74
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	29	100.0%	12.93	4.12	25.30
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	29	100.0%	10.50	4.38	23.65
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	29	100.0%	11.73	7.59	34.49
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	29	100.0%	14.70	9.96	44.58
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	29	100.0%	14.70	9.96	44.58
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	29	100.0%	1.66	2.66	9.63
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	29	100.0%	8.55	2.89	17.21
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	29	100.0%	8.55	2.89	17.21
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	28	100.0%	0.71	0.25	1.47
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	29	100.0%	8.97	2.06	15.15
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	29	100.0%	2.20	2.78	10.53
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	28	100.0%	0.33	0.52	1.90
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	29	100.0%	3.82	0.56	5.50
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	38	100.0%	4.58	0.83	7.06
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	29	100.0%	38.76	8.53	64.35
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	29	100.0%	2.47	3.92	14.21
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	29	100.0%	3.47	3.49	13.95
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	29	100.0%	13.69	2.77	21.98
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	29	100.0%	0.42	0.10	0.72
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	193	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	29	100.0%	18.17	2.16	24.64002922
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	29	100.0%	68.21	6.96	89.09
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	29	100.0%	6.60	0.67	8.62
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	29	100.0%	3.67	0.40	4.89
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	95	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	95	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)