

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

23 March 2017 to 22 March 2018 Date generated: 03 April 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
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	254	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	254	100.0%	0	0.26	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	254	100.0%	4	22.05	60
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	182	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	182	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	786	100.0%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	28	100.0%	5.07	0.38	6.46
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	254	100.0%	19.11	1.46	22.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	28	100.0%	135.36	6.79	150.00
Turbidity	(NTU)	Operational	95.0%	≤1	254	100.0%	0.30	0.09	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	254	100.0%	0.30	0.09	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	254	100.0%	7.85	0.14	8.25
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	253	100.0%	0.27	0.15	0.50
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	28	100.0%	10.28	0.90	11.73
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	254	100.0%	0.11	0.21	1.31
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤4.1	254	100.0%	1.05	0.53	1.85
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	27	100.0%	0.18	0.02	0.20
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	254	100.0%	0.49	0.09	0.81
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	254	100.0%	0.09	0.09	0.35
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	254	100.0%	0.14	0.10	0.44
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	254	100.0%	1.17	0.53	1.97
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	28	100.0%	8.35	0.78	10.00
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	27	100.0%	13.04	0.71	14.00
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	27	100.0%	13.04	0.71	14.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	28	100.0%	0.02	0.00	0.02
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	28	100.0%	41.39	11.24	65.38
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	28	100.0%	0.50	0.00	0.50
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	28	100.0%	0.97	0.67	2.47
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	27	100.0%	34.89	7.66	58.06
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	28	100.0%	29.64	24.57	119.90
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%	10.04	0.19	10.73
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	28	100.0%	5.00	0.02	5.07
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	28	100.0%	19.77	9.44	42.68
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	28	100.0%	19.77	9.44	42.68
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	28	100.0%	0.38	0.45	1.90
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	28	100.0%	10.75	3.97	25.33
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	28	100.0%	10.75	3.97	25.33
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%	0.84	1.19	5.29
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	28	100.0%	0.22	0.10	0.59
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	28	100.0%	3.76	0.53	5.22
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	36	100.0%	5.00	0.00	5.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	28	100.0%	47.14	6.42	60.73
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤100	28	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	97.0%	≤100	28	100.0%	1.08	0.55	2.29
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	28	100.0%	13.61	1.50	16.46
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	28	100.0%	0.40	0.04	0.47
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	184	100.0%	0.32	0.02	0.36
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	28	100.0%	18.07	3.85	28.57
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	28	100.0%	66.46	13.27	108.66
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	28	100.0%	6.19	1.29	10.73
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	28	100.0%	3.78	0.37	4.47
<b>Rand Water Risk Determinands (RWRD)</b>									
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) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)
  - (8) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/60)