

21 February 2017 to 22 March 2017 **Victor Khanye Municipality (Delmas System) Water Quality Report - 1 Month** Date generated: 03 April 2017

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	20	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	20	100.0%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	20	100.0%	2	4.61	18
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	14	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	14	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	74	100.0%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	2	100.0%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	20	100.0%	20.40	5.04	37.58
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	2	100.0%	197.50	95.46	263.65
Turbidity	(NTU)	Operational	95.0%	≤1	20	100.0%	0.29	0.11	0.47
Turbidity	(NTU)	Aesthetic	95.0%	≤5	20	100.0%	0.29	0.11	0.47
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	20	100.0%	8.02	0.10	8.18
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	20	100.0%	0.24	0.11	0.40
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	1	100.0%	11.00	not applicable	11.00
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	20	100.0%	0.10	0.08	0.33
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤4.1	20	100.0%	1.17	0.44	0.00
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	1	100.0%	0.15	not applicable	0.15
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	20	100.0%	0.65	0.13	0.78
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	20	100.0%	0.12	0.12	0.46
Combined nitrate plus nitrite	(NO <sub>2</sub> /0.9 + NO <sub>3</sub> /11)	Acute health	99.0%	≤1	20	100.0%	0.19	0.14	0.58
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	20	100.0%	1.27	0.45	1.85
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	2	100.0%	7.80	0.00	7.80
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	1	100.0%	12.00	not applicable	12.00
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	1	100.0%	12.00	not applicable	12.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	2	100.0%	0.02	0.00	0.02
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	2	100.0%	40.50	7.78	45.89
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	2	100.0%	0.50	0.00	0.50
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	2	100.0%	1.10	0.00	1.10
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	2	100.0%	36.50	4.95	39.93
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	2	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	2	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	2	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	2	100.0%	10.00	0.00	10.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	2	100.0%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	2	100.0%	16.50	0.71	16.99
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	2	100.0%	16.50	0.71	16.99
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	2	100.0%	0.20	0.00	0.20
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	2	100.0%	10.00	0.00	10.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	2	100.0%	10.00	0.00	10.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	2	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	2	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	2	100.0%	0.50	0.00	0.50
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	2	100.0%	0.20	0.00	0.20
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	2	100.0%	4.20	0.14	4.30
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	2	100.0%	5.00	0.00	5.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	2	100.0%	46.50	3.54	48.95
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤100	2	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	97.0%	≤100	2	100.0%	2.65	0.21	2.80
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	2	100.0%	15.00	0.00	15.00
Combined trihalomethanes	(CHCl <sub>3</sub> /300 + CHBr <sub>3</sub> /100 + CHBr <sub>2</sub> Cl/100 + CHBrCl <sub>2</sub> /60)	Chronic health	97.0%	≤1	2	100.0%	0.44	0.01	0.45
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	15	100.0%	0.36	0.00	0.36
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	2	100.0%	17.00	0.00	17
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	2	100.0%	62.22	0.49	62.56
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	2	100.0%	5.70	0.14	5.80
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	2	100.0%	3.00	0.00	3.00

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
  - (4) Residual disinfectant : Results from chloraminated system
  - (3) Monochloramine : Results are from the choraminated 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