

**Victor Khanye Municipality (Delmas System) Water Quality Report - 1 Month**

22 November 2017 to 22 December 2017

Date generated: 04 January 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	20	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	20	100.0%	0	0.89	3
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	20	100.0%	1	2.33	8
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	16	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	16	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	64	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%	18.65	0.93	20.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	20	100.0%	132.34	5.44	140.21
Turbidity	(NTU)	Operational	95.0%	≤1	20	100.0%	0.27	0.08	0.42
Turbidity	(NTU)	Aesthetic	95.0%	≤5	20	100.0%	0.27	0.08	0.42
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	20	100.0%	7.92	0.15	8.15
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	20	100.0%	0.27	0.13	0.49
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	2	100.0%	11.00	0.00	11.00
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	20	100.0%	0.10	0.08	0.32
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤4.1	20	100.0%	1.00	0.43	1.78
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	2	100.0%	0.19	0.00	0.19
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	20	100.0%	0.44	0.00	0.44
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	20	100.0%	0.16	0.14	0.50
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	20	100.0%	0.21	0.15	0.60
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	20	100.0%	1.10	0.43	1.97
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	2	100.0%	8.55	0.21	8.70
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	2	100.0%	13.00	0.00	13.00
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	2	100.0%	13.00	0.00	13.00
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%	44.50	3.54	46.95
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%	1.60	0.28	1.80
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	2	100.0%	34.50	0.71	34.99
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%	17.00	2.83	18.96
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	2	100.0%	17.00	2.83	18.96
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%	3.80	0.14	3.90
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	3	100.0%	5.00	0.00	5.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	2	100.0%	43.50	0.71	43.99
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%	1.35	0.21	1.50
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	2	100.0%	14.00	1.41	14.98
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	2	100.0%	0.40	0.03	0.42
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	16	100.0%	0.31	0.00	0.31
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	2	100.0%	18.50	0.71	18.99
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	2	100.0%	66.49	1.52	67.54
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	2	100.0%	5.85	0.07	5.90
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	2	100.0%	3.90	0.00	3.90
<b>Rand Water Risk Determinands (RWRD)</b>									
Odour	TON	RWRD	95.0%	≤2	8	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	8	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)