

Moorreesburg			SANS 241:2015	Compliance Calculations						
Parameter	Unit	Risk	Standard Limits (SANS 241-2011 and SANS 241- 2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population < 100 000)	Risk Character P = prescribed monitoring R = identified risk N = negligible risk	Compliance Status (Yes / No)	Average
Conductivity	mS/m	Aesthetic	≤ 170	31	29	93.5%	Excellent	P/N	Yes	37.18
Turbidity	NTU	Operational	≤ 1	31	26	83.9%	Unacceptable	P/R	No	0.60
		Aesthetic	≤ 5	31	30	96.8%	Excellent	P/N	Yes	
pH (at 25°C)		Operational	≥5.0 - ≤ 9.7	31	25	80.6%	Unacceptable	P	No	9.24
Heterotrophic Plate Count	cfu/ml	Operational	< 1000	33	30	90.9%	Good	P	Yes	130.97
E.Coli (<1 taken as 0)	cfu/100ml	Acute Health Micro	≤ 0	33	31	93.9%	Unacceptable	P	No	0.12
Total Coliform Count (<1 taken as 0)	cfu/100ml	Operational	≤ 10	33	32	97.0%	Excellent	N	Yes	74.67
Free Chlorine	mg/L	Chronic Health	≤ 5	1	1	100.0%	Excellent	N	Yes	0.05
Colour	mg/L	Aesthetic	≤ 15	1	1	100.0%	Excellent		Yes	4.00
Alkalinity (as CaCO ₃)	mg/L		-	1						35.90
Total Hardness (as CaCO ₃)	mg/L		-	0						
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	1	1	100.0%	Excellent		Yes	14.40
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	1	1	100.0%	Excellent		Yes	5.10
Sodium (as Na)	mg/L	Aesthetic	≤ 200	1	1	100.0%	Excellent	N	Yes	22.50
Potassium (as K)	mg/L	Operational / Health	≤ 50	1	1	100.0%	Excellent		Yes	1.50
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	1	1	100.0%	Excellent	N	Yes	0.00
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	48.40
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	1	1	100.0%	Excellent	R	Yes	0.24
Sulphate (as SO ₄ ²⁻)	mg/L	Acute Health Chemical	≤ 500	1	1	100.0%	Excellent	N	Yes	10.20
		Aesthetic	≤ 250	1	1	100.0%	Excellent	N	Yes	
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	1	1	100.0%	Excellent	N	Yes	186.00
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	1	1	100.0%	Excellent	N	Yes	0.10
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health Chemical	≤ 12	1	1	100.0%	Excellent	R	Yes	0.32
Iron (as Fe)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	24.00
		Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	
Manganese (as Mn)	ug/L	Chronic Health	≤ 400	1	1	100.0%	Excellent	N	Yes	19.00
		Aesthetic	< 100	1	1	100.0%	Excellent	R	Yes	
Aluminium (as Al)	ug/L	Operational	≤300	1	1	100.0%	Excellent		Yes	19.00
Cytopathogenic Viruses	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Cryptosporidium Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Giardia Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Chloroform	ug/L	Chronic Health	≤ 300	1	1	100.0%	Excellent	N	Yes	20.00
Bromodichloromethane	ug/L	Chronic Health	≤ 60	1	1	100.0%	Excellent	N	Yes	10.00
Dibromochloromethane	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Bromoform	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Somatic Coliphages	cfu/10ml	Operational	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Combined Trihalomethanes	mg/L	Chronic Health	≤ 1	1	1	100.0%	Excellent	N	Yes	0.43
Phenols	ug/L	Aesthetic	≤10	1	1	100.0%	Excellent	N	Yes	0.01
Calcium Hardness (as CaCO ₃)	mg/L		-	0						
Magnesium Hardness (as CaCO ₃)	mg/L		-	0						
Nitrate as N	mg/L	Acute Health Chemical	≤ 11	1	1	100.0%	Excellent	R	Yes	0.20
Nitrite as N	mg/L	Acute Health Chemical	≤ 0.9	1	1	100.0%	Excellent	N	Yes	0.20
Antimony (as Sb)	ug/L	Chronic Health	≤ 20	1	1	100.0%	Excellent	N	Yes	10.00
Arsenic (as As)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	3.00
Cadmium (as Cd)	ug/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	1.00
Chromium (as Cr)	ug/L	Chronic Health	≤ 50	1	1	100.0%	Excellent	N	Yes	7.00
Cobalt (as Co)	ug/L	Chronic Health	≤ 500	0	0					
Copper (as Cu)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	6.00
Lead (as Pb)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	7.00
Mercury (as Hg)	ug/L	Chronic Health	≤ 6	1	1	100.0%	Excellent	N	Yes	5.00
Nickel (as Ni)	ug/L	Chronic Health	≤ 70	1	1	100.0%	Excellent	N	Yes	1.00
Selenium (as Se)	ug/L	Chronic Health	≤ 40	1	1	100.0%	Excellent	N	Yes	10.00
Vanadium (as V)	ug/L	Chronic Health	≤ 200	0	0					
Cyanide	ug/L	Acute Health Chemical	≤ 200	1	1	100.0%	Excellent	N	Yes	20.00
Total Organic Carbon	mg/L	Chronic Health	≤ 10	1	1	100.0%	Excellent		Yes	3.50
Uranium (as U)	ug/L	Chronic Health	≤ 30	1	1	100.0%	Excellent	N	Yes	15.00
Barium (as Ba)	ug/L	Chronic Health	≤ 700	1	1	100.0%	Excellent	N	Yes	15.00
Boron (as B)	mg/L	Chronic Health	≤ 2.4	1	1	100.0%	Excellent	N	Yes	0.10
CaCO ₃ Precipitation Potential			-	0						
Microcystin (as LR)	ug/L	Chronic Health	≤ 1	1	1	100.0%	Excellent		Yes	0.15
Monochloramine	mg/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	0.20

Acute Health Chemical	5	5	100.0%	Excellent
Acute Health Microbiological	35	33	94.3%	Unacceptable
Chronic Health	24	24	100.0%	Excellent
Aesthetic	74	71	95.9%	Excellent
Operational Efficiency	132	117	88.6%	Unacceptable

Koringberg			SANS 241:2015	Compliance Calculations						
Parameter	Unit	Risk	Standard Limits (SANS 241-2011 and SANS 241- 2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population < 100 000)	Risk Character P = prescribed monitoring R = identified risk N = negligible risk	Compliance Status (Yes / No)	Average
Conductivity	mS/m	Aesthetic	≤ 170	19	18	94.7%	Excellent	P/N	Yes	63.18
Turbidity	NTU	Operational	≤ 1	19	18	94.7%	Excellent	P/R	Yes	0.79
		Aesthetic	≤ 5	19	18	94.7%	Excellent	P/N	Yes	
pH (at 25°C)		Operational	≥ 5.0 - ≤ 9.7	19	19	100.0%	Excellent	P	Yes	8.75
Heterotrophic Plate Count	cfu/ml	Operational	≤ 1000	19	18	94.7%	Excellent	P	Yes	148.21
E.Coli (<1 taken as 0)	cfu/100ml	Acute Health Micro	≤ 0	19	19	100.0%	Excellent	P	Yes	0.00
Total Coliform Count (<1 taken as 0)	cfu/100ml	Operational	≤ 10	19	19	100.0%	Excellent	N	Yes	0.79
Free Chlorine	mg/L	Chronic Health	≤ 5	1	1	100.0%	Excellent	N	Yes	0.05
Colour	mg/L	Aesthetic	≤ 15	1	1	100.0%	Excellent		Yes	4.00
Alkalinity (as CaCO ₃)	mg/L		-	1						32.70
Total Hardness (as CaCO ₃)	mg/L		-	0						
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	1	1	100.0%	Excellent		Yes	13.40
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	1	1	100.0%	Excellent		Yes	5.50
Sodium (as Na)	mg/L	Aesthetic	≤ 200	1	1	100.0%	Excellent	N	Yes	23.10
Potassium (as K)	mg/L	Operational / Health	≤ 50	1	1	100.0%	Excellent		Yes	1.50
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	1	1	100.0%	Excellent	N	Yes	0.01
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	48.20
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	1	1	100.0%	Excellent	R	Yes	0.24
Sulphate (as SO ₄ ²⁻)	mg/L	Acute Health Chemical	≤ 500	1	1	100.0%	Excellent	N	Yes	10.50
		Aesthetic	≤ 250	1	1	100.0%	Excellent	N	Yes	
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	1	1	100.0%	Excellent	N	Yes	186.00
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	1	1	100.0%	Excellent	N	Yes	0.10
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health Chemical	≤ 12	1	1	100.0%	Excellent	R	Yes	0.33
Iron (as Fe)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	24.00
		Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	
Manganese (as Mn)	ug/L	Chronic Health	≤ 400	1	1	100.0%	Excellent	N	Yes	19.00
		Aesthetic	< 100	1	1	100.0%	Excellent	R	Yes	
Aluminium (as Al)	ug/L	Operational	≤ 300	1	1	100.0%	Excellent		Yes	12.00
Cytopathogenic Viruses	cfu/10 l	Acute Health Micro	≤ 0							
Cryptosporidium Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Giardia Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Chloroform	ug/L	Chronic Health	≤ 300	1	1	100.0%	Excellent	N	Yes	30.00
Bromodichloromethane	ug/L	Chronic Health	≤ 60	1	1	100.0%	Excellent	N	Yes	16.00
Dibromochloromethane	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Bromoform	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Somatic Coliphages	cfu/10ml	Operational	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Combined Trihalomethanes	mg/L	Chronic Health	≤ 1	1	1	100.0%	Excellent	N	Yes	0.57
Phenols	ug/L	Aesthetic	≤ 10	1	1	100.0%	Excellent	N	Yes	0.01
Calcium Hardness (as CaCO ₃)	mg/L		-	0						
Magnesium Hardness (as CaCO ₃)	mg/L		-	0						
Nitrate as N	mg/L	Acute Health Chemical	≤ 11	1	1	100.0%	Excellent	R	Yes	0.20
Nitrite as N	mg/L	Acute Health Chemical	≤ 0.9	1	1	100.0%	Excellent	N	Yes	0.20
Antimony (as Sb)	ug/L	Chronic Health	≤ 20	1	1	100.0%	Excellent	N	Yes	10.00
Arsenic (as As)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	3.00
Cadmium (as Cd)	ug/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	1.00
Chromium (as Cr)	ug/L	Chronic Health	≤ 50	1	1	100.0%	Excellent	N	Yes	7.00
Cobalt (as Co)	ug/L	Chronic Health	≤ 500							
Copper (as Cu)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	6.00
Lead (as Pb)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	7.00
Mercury (as Hg)	ug/L	Chronic Health	≤ 6	1	1	100.0%	Excellent	N	Yes	5.00
Nickel (as Ni)	ug/L	Chronic Health	≤ 70	1	1	100.0%	Excellent	N	Yes	1.00
Selenium (as Se)	ug/L	Chronic Health	≤ 40	1	1	100.0%	Excellent	N	Yes	10.00
Vanadium (as V)	ug/L	Chronic Health	≤ 200							
Cyanide	ug/L	Acute Health Chemical	≤ 200	1	1	100.0%	Excellent	N	Yes	20.00
Total Organic Carbon	mg/L	Chronic Health	≤ 10	1	1	100.0%	Excellent		Yes	1.20
Uranium (as U)	ug/L	Chronic Health	≤ 30	1	1	100.0%	Excellent	N	Yes	15.00
Barium (as Ba)	ug/L	Chronic Health	≤ 700	1	1	100.0%	Excellent	N	Yes	11.00
Boron (as B)	mg/L	Chronic Health	≤ 2.4	1	1	100.0%	Excellent	N	Yes	0.10
CaCO ₃ Precipitation Potential			-	0						
Microcystin (as LR)	ug/L	Chronic Health	≤ 1	1	1	100.0%	Excellent		Yes	0.15
Monochloramine	mg/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	0.20

Acute Health Chemical	5	5	100.0%	Excellent
Acute Health Microbiological	21	21	100.0%	Excellent
Chronic Health	24	24	100.0%	Excellent
Aesthetic	50	48	96.0%	Excellent
Operational Efficiency	80	78	97.5%	Excellent

Malmesbury			SANS 241:2015	Compliance Calculations						
Parameter	Unit	Risk	Standard Limits (SANS 241-2011 and SANS 241- 2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population < 100 000)	Risk Character P = prescribed monitoring R = identified risk N = negligible risk	Compliance Status (Yes / No)	Average
Conductivity	mS/m	Aesthetic	≤ 170	83	83	100.0%	Excellent	P/N	Yes	12.82
Turbidity	NTU	Operational	≤ 1	83	66	79.5%	Unacceptable	P/R	No	0.67
		Aesthetic	≤ 5	83	83	100.0%	Excellent	P/N	Yes	
pH (at 25°C)		Operational	≥5.0 - ≤ 9.7	83	77	92.8%	Good	P	Yes	9.09
Heterotrophic Plate Count	cfu/ml	Operational	≤ 1000	85	85	100.0%	Excellent	P	Yes	10.04
E.Coli (<1 taken as 0)	cfu/100ml	Acute Health Micro	≤ 0	85	83	97.6%	Excellent	P	Yes	0.04
Total Coliform Count (<1 taken as 0)	cfu/100ml	Operational	≤ 10	85	85	100.0%	Excellent	N	Yes	0.15
Free Chlorine	mg/L	Chronic Health	≤ 5	4	4	100.0%	Excellent	N	Yes	0.06
Colour	mg/L	Aesthetic	≤ 15	4	4	100.0%	Excellent		Yes	4.00
Alkalinity (as CaCO ₃)	mg/L		-	4						20.55
Total Hardness (as CaCO ₃)	mg/L		-	0						
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	4	4	100.0%	Excellent		Yes	7.85
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	4	4	100.0%	Excellent		Yes	1.75
Sodium (as Na)	mg/L	Aesthetic	≤ 200	4	4	100.0%	Excellent	N	Yes	8.18
Potassium (as K)	mg/L	Operational / Health	≤ 50	4	4	100.0%	Excellent		Yes	0.75
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	4	4	100.0%	Excellent	N	Yes	0.01
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	4	4	100.0%	Excellent	R	Yes	19.15
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	4	4	100.0%	Excellent	R	Yes	0.18
Sulphate (as SO ₄ ²⁻)	mg/L	Acute Health Chemical	≤ 500	4	4	100.0%	Excellent	N	Yes	3.68
		Aesthetic	≤ 250	4	4	100.0%	Excellent	N	Yes	
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	4	4	100.0%	Excellent	N	Yes	94.75
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	4	4	100.0%	Excellent	N	Yes	0.10
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health Chemical	≤ 12	4	4	100.0%	Excellent	R	Yes	0.20
Iron (as Fe)	ug/L	Chronic Health	≤ 2000	4	4	100.0%	Excellent	N	Yes	24.50
		Aesthetic	≤ 300	4	4	100.0%	Excellent	R	Yes	
Manganese (as Mn)	ug/L	Chronic Health	≤ 400	4	4	100.0%	Excellent	N	Yes	19.00
		Aesthetic	< 100	4	4	100.0%	Excellent	R	Yes	
Aluminium (as Al)	ug/L	Operational	≤ 300	4	4	100.0%	Excellent		Yes	53.50
Cytopathogenic Viruses	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Cryptosporidium Species	cfu/10 l	Acute Health Micro	≤ 0	4	4	100.0%	Excellent		Yes	0.00
Giardia Species	cfu/10 l	Acute Health Micro	≤ 0	4	4	100.0%	Excellent		Yes	0.00
Chloroform	ug/L	Chronic Health	≤ 300	4	4	100.0%	Excellent	N	Yes	26.25
Bromodichloromethane	ug/L	Chronic Health	≤ 60	4	4	100.0%	Excellent	N	Yes	10.50
Dibromochloromethane	ug/L	Chronic Health	≤ 100	4	4	100.0%	Excellent	N	Yes	10.00
Bromoform	ug/L	Chronic Health	≤ 100	4	4	100.0%	Excellent	N	Yes	10.00
Somatic Coliphages	cfu/10ml	Operational	≤ 0	4	4	100.0%	Excellent		Yes	0.00
Combined Trihalomethanes	mg/L	Chronic Health	≤ 1	4	4	100.0%	Excellent	N	Yes	0.47
Phenols	ug/L	Aesthetic	≤ 10	4	4	100.0%	Excellent	N	Yes	0.01
Calcium Hardness (as CaCO ₃)	mg/L		-	0						
Magnesium Hardness (as CaCO ₃)	mg/L		-	0						
Nitrate as N	mg/L	Acute Health Chemical	≤ 11	4	4	100.0%	Excellent	R	Yes	0.20
Nitrite as N	mg/L	Acute Health Chemical	≤ 0.9	4	4	100.0%	Excellent	N	Yes	0.20
Antimony (as Sb)	ug/L	Chronic Health	≤ 20	4	4	100.0%	Excellent	N	Yes	10.00
Arsenic (as As)	ug/L	Chronic Health	≤ 10	4	4	100.0%	Excellent	N	Yes	3.00
Cadmium (as Cd)	ug/L	Chronic Health	≤ 3	4	4	100.0%	Excellent	N	Yes	1.00
Chromium (as Cr)	ug/L	Chronic Health	≤ 50	4	4	100.0%	Excellent	N	Yes	7.00
Cobalt (as Co)	ug/L	Chronic Health	≤ 500	0						
Copper (as Cu)	ug/L	Chronic Health	≤ 2000	4	4	100.0%	Excellent	N	Yes	6.75
Lead (as Pb)	ug/L	Chronic Health	≤ 10	4	4	100.0%	Excellent	N	Yes	7.00
Mercury (as Hg)	ug/L	Chronic Health	≤ 6	4	4	100.0%	Excellent	N	Yes	5.00
Nickel (as Ni)	ug/L	Chronic Health	≤ 70	4	4	100.0%	Excellent	N	Yes	1.00
Selenium (as Se)	ug/L	Chronic Health	≤ 40	4	4	100.0%	Excellent	N	Yes	10.00
Vanadium (as V)	ug/L	Chronic Health	≤ 200	0						
Cyanide	ug/L	Acute Health Chemical	≤ 200	4	4	100.0%	Excellent	N	Yes	20.25
Total Organic Carbon	mg/L	Chronic Health	≤ 10	4	4	100.0%	Excellent		Yes	0.98
Uranium (as U)	ug/L	Chronic Health	≤ 30	4	4	100.0%	Excellent	N	Yes	15.00
Barium (as Ba)	ug/L	Chronic Health	≤ 700	4	4	100.0%	Excellent	N	Yes	8.00
Boron (as B)	mg/L	Chronic Health	≤ 2.4	4	4	100.0%	Excellent	N	Yes	0.10
CaCO ₃ Precipitation Potential			-	0						
Microcystin (as LR)	ug/L	Chronic Health	≤ 1	4	4	100.0%	Excellent		Yes	0.15
Monochloramine	mg/L	Chronic Health	≤ 3	4	4	100.0%	Excellent	N	Yes	0.05

Acute Health Chemical	20	20	100.0%	Excellent
Acute Health Microbiological	93	91	97.8%	Excellent
Chronic Health	96	96	100.0%	Excellent
Aesthetic	214	214	100.0%	Excellent
Operational Efficiency	352	329	93.5%	Excellent

Darling			SANS 241:2015	Compliance Calculations						
Parameter	Unit	Risk	Standard Limits (SANS 241-2011 and SANS 241- 2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population < 100 000)	Risk Character P = prescribed monitoring R = identified risk N = negligible risk	Compliance Status (Yes / No)	Average
Conductivity	mS/m	Aesthetic	≤ 170	31	31	100.0%	Excellent	P/N	Yes	13.33
Turbidity	NTU	Operational	≤ 1	31	29	93.5%	Excellent	P/R	Yes	0.42
		Aesthetic	≤ 5	31	31	100.0%	Excellent	P/N	Yes	
pH (at 25°C)		Operational	≥5.0 - ≤ 9.7	31	17	54.8%	Unacceptable	P	No	9.43
Heterotrophic Plate Count	cfu/ml	Operational	≤ 1000	32	32	100.0%	Excellent	P	Yes	7.69
E.Coli (<1 taken as 0)	cfu/100ml	Acute Health Micro	≤ 0	32	32	100.0%	Excellent	P	Yes	0.00
Total Coliform Count (<1 taken as 0)	cfu/100ml	Operational	≤ 10	32	32	100.0%	Excellent	N	Yes	0.19
Free Chlorine	mg/L	Chronic Health	≤ 5	2	2	100.0%	Excellent	N	Yes	0.05
Colour	mg/L	Aesthetic	≤ 15	2	2	100.0%	Excellent		Yes	4.00
Alkalinity (as CaCO ₃)	mg/L		-	2						21.15
Total Hardness (as CaCO ₃)	mg/L		-	0						
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	2	2	100.0%	Excellent		Yes	7.80
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	2	2	100.0%	Excellent		Yes	1.85
Sodium (as Na)	mg/L	Aesthetic	≤ 200	2	2	100.0%	Excellent	N	Yes	8.55
Potassium (as K)	mg/L	Operational / Health	≤ 50	2	2	100.0%	Excellent		Yes	0.75
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	2	2	100.0%	Excellent	N	Yes	0.00
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	2	2	100.0%	Excellent	R	Yes	18.40
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	2	2	100.0%	Excellent	R	Yes	0.16
Sulphate (as SO ₄ ²⁻)	mg/L	Acute Health Chemical	≤ 500	2	2	100.0%	Excellent	N	Yes	3.65
		Aesthetic	≤ 250	2	2	100.0%	Excellent	N	Yes	
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	2	2	100.0%	Excellent	N	Yes	93.00
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	2	2	100.0%	Excellent	N	Yes	0.10
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health Chemical	≤ 12	2	2	100.0%	Excellent	R	Yes	0.90
Iron (as Fe)	ug/L	Chronic Health	≤ 2000	2	2	100.0%	Excellent	N	Yes	24.00
		Aesthetic	≤ 300	2	2	100.0%	Excellent	R	Yes	
Manganese (as Mn)	ug/L	Chronic Health	≤ 400	2	2	100.0%	Excellent	N	Yes	19.00
		Aesthetic	< 100	2	2	100.0%	Excellent	R	Yes	
Aluminium (as Al)	ug/L	Operational	≤ 300	2	2	100.0%	Excellent		Yes	47.50
Cytopathogenic Viruses	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Cryptosporidium Species	cfu/10 l	Acute Health Micro	≤ 0	2	2	100.0%	Excellent		Yes	0.00
Giardia Species	cfu/10 l	Acute Health Micro	≤ 0	2	2	100.0%	Excellent		Yes	0.00
Chloroform	ug/L	Chronic Health	≤ 300	2	2	100.0%	Excellent	N	Yes	16.50
Bromodichloromethane	ug/L	Chronic Health	≤ 60	2	2	100.0%	Excellent	N	Yes	10.00
Dibromochloromethane	ug/L	Chronic Health	≤ 100	2	2	100.0%	Excellent	N	Yes	10.00
Bromoform	ug/L	Chronic Health	≤ 100	2	2	100.0%	Excellent	N	Yes	10.00
Somatic Coliphages	cfu/10ml	Operational	≤ 0	2	2	100.0%	Excellent		Yes	0.00
Combined Trihalomethanes	mg/L	Chronic Health	≤ 1	2	2	100.0%	Excellent	N	Yes	0.43
Phenols	ug/L	Aesthetic	≤ 10	2	2	100.0%	Excellent	N	Yes	0.01
Calcium Hardness (as CaCO ₃)	mg/L		-	0						
Magnesium Hardness (as CaCO ₃)	mg/L		-	0						
Nitrate as N	mg/L	Acute Health Chemical	≤ 11	2	2	100.0%	Excellent	R	Yes	0.80
Nitrite as N	mg/L	Acute Health Chemical	≤ 0.9	2	2	100.0%	Excellent	N	Yes	0.20
Antimony (as Sb)	ug/L	Chronic Health	≤ 20	2	2	100.0%	Excellent	N	Yes	10.00
Arsenic (as As)	ug/L	Chronic Health	≤ 10	2	2	100.0%	Excellent	N	Yes	3.00
Cadmium (as Cd)	ug/L	Chronic Health	≤ 3	2	2	100.0%	Excellent	N	Yes	1.00
Chromium (as Cr)	ug/L	Chronic Health	≤ 50	2	2	100.0%	Excellent	N	Yes	7.00
Cobalt (as Co)	ug/L	Chronic Health	≤ 500	0	0					
Copper (as Cu)	ug/L	Chronic Health	≤ 2000	2	2	100.0%	Excellent	N	Yes	12.50
Lead (as Pb)	ug/L	Chronic Health	≤ 10	2	2	100.0%	Excellent	N	Yes	7.00
Mercury (as Hg)	ug/L	Chronic Health	≤ 6	2	2	100.0%	Excellent	N	Yes	5.00
Nickel (as Ni)	ug/L	Chronic Health	≤ 70	2	2	100.0%	Excellent	N	Yes	1.00
Selenium (as Se)	ug/L	Chronic Health	≤ 40	2	2	100.0%	Excellent	N	Yes	10.00
Vanadium (as V)	ug/L	Chronic Health	≤ 200	0	0					
Cyanide	ug/L	Acute Health Chemical	≤ 200	2	2	100.0%	Excellent	N	Yes	20.00
Total Organic Carbon	mg/L	Chronic Health	≤ 10	2	2	100.0%	Excellent		Yes	0.70
Uranium (as U)	ug/L	Chronic Health	≤ 30	2	2	100.0%	Excellent	N	Yes	15.00
Barium (as Ba)	ug/L	Chronic Health	≤ 700	2	2	100.0%	Excellent	N	Yes	9.00
Boron (as B)	mg/L	Chronic Health	≤ 2.4	2	2	100.0%	Excellent	N	Yes	0.10
CaCO ₃ Precipitation Potential			-	0						
Microcystin (as LR)	ug/L	Chronic Health	≤ 1	2	2	100.0%	Excellent		Yes	0.15
Monochloramine	mg/L	Chronic Health	≤ 3	2	2	100.0%	Excellent	N	Yes	0.05

Acute Health Chemical	10	10	100.0%	Excellent
Acute Health Microbiological	36	36	100.0%	Excellent
Chronic Health	48	48	100.0%	Excellent
Aesthetic	86	86	100.0%	Excellent
Operational Efficiency	134	118	88.1%	Unacceptable

Riebeek Kasteel			SANS 241:2015	Compliance Calculations						
Parameter	Unit	Risk	Standard Limits (SANS 241-2011 and SANS 241- 2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population < 100 000)	Risk Character P = prescribed monitoring R = identified risk N = negligible risk	Compliance Status (Yes / No)	Average
Conductivity	mS/m	Aesthetic	≤ 170	20	20	100.0%	Excellent	P/N	Yes	12.27
Turbidity	NTU	Operational	≤ 1	20	20	100.0%	Excellent	P/R	Yes	0.26
		Aesthetic	≤ 5	20	20	100.0%	Excellent	P/N	Yes	
pH (at 25°C)		Operational	≥ 5.0 - ≤ 9.7	20	19	95.0%	Excellent	P	Yes	9.19
Heterotrophic Plate Count	cfu/ml	Operational	≤ 1000	20	20	100.0%	Excellent	P	Yes	23.80
E.Coli (<1 taken as 0)	cfu/100ml	Acute Health Micro	≤ 0	20	17	85.0%	Unacceptable	P	No	0.25
Total Coliform Count (<1 taken as 0)	cfu/100ml	Operational	≤ 10	20	14	70.0%	Unacceptable	N	No	13.35
Free Chlorine	mg/L	Chronic Health	≤ 5	1	1	100.0%	Excellent	N	Yes	0.09
Colour	mg/L	Aesthetic	≤ 15	1	1	100.0%	Excellent		Yes	4.00
Alkalinity (as CaCO ₃)	mg/L		-	1						17.90
Total Hardness (as CaCO ₃)	mg/L		-	0						
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	1	1	100.0%	Excellent		Yes	6.40
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	1	1	100.0%	Excellent		Yes	1.90
Sodium (as Na)	mg/L	Aesthetic	≤ 200	1	1	100.0%	Excellent	N	Yes	8.10
Potassium (as K)	mg/L	Operational / Health	≤ 50	1	1	100.0%	Excellent		Yes	0.67
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	1	1	100.0%	Excellent	N	Yes	0.00
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	18.60
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	1	1	100.0%	Excellent	R	Yes	0.24
		Acute Health Chemical	≤ 500	1	1	100.0%	Excellent	N	Yes	3.60
Sulphate (as SO ₄ ²⁻)	mg/L	Aesthetic	≤ 250	1	1	100.0%	Excellent	N	Yes	
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	1	1	100.0%	Excellent	N	Yes	93.00
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	1	1	100.0%	Excellent	N	Yes	0.10
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health Chemical	≤ 12	1	1	100.0%	Excellent	R	Yes	0.20
Iron (as Fe)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	44.00
		Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	
Manganese (as Mn)	ug/L	Chronic Health	≤ 400	1	1	100.0%	Excellent	N	Yes	19.00
		Aesthetic	< 100	1	1	100.0%	Excellent	R	Yes	
Aluminium (as Al)	ug/L	Operational	≤ 300	1	1	100.0%	Excellent		Yes	44.00
Cytopathogenic Viruses	cfu/10 l	Acute Health Micro	≤ 0	0						
Cryptosporidium Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Giardia Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Chloroform	ug/L	Chronic Health	≤ 300	1	1	100.0%	Excellent	N	Yes	45.00
Bromodichloromethane	ug/L	Chronic Health	≤ 60	1	1	100.0%	Excellent	N	Yes	10.00
Dibromochloromethane	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Bromoform	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Somatic Coliphages	cfu/10ml	Operational	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Combined Trihalomethanes	mg/L	Chronic Health	≤ 1	1	1	100.0%	Excellent	N	Yes	0.52
Phenols	ug/L	Aesthetic	≤ 10	1	1	100.0%	Excellent	N	Yes	0.01
Calcium Hardness (as CaCO ₃)	mg/L		-	0						
Magnesium Hardness (as CaCO ₃)	mg/L		-	0						
Nitrate as N	mg/L	Acute Health Chemical	≤ 11	1	1	100.0%	Excellent	R	Yes	0.20
Nitrite as N	mg/L	Acute Health Chemical	≤ 0.9	1	1	100.0%	Excellent	N	Yes	0.20
Antimony (as Sb)	ug/L	Chronic Health	≤ 20	1	1	100.0%	Excellent	N	Yes	10.00
Arsenic (as As)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	3.00
Cadmium (as Cd)	ug/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	1.00
Chromium (as Cr)	ug/L	Chronic Health	≤ 50	1	1	100.0%	Excellent	N	Yes	7.00
Cobalt (as Co)	ug/L	Chronic Health	≤ 500	0	0					
Copper (as Cu)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	7.00
Lead (as Pb)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	7.00
Mercury (as Hg)	ug/L	Chronic Health	≤ 6	1	1	100.0%	Excellent	N	Yes	5.00
Nickel (as Ni)	ug/L	Chronic Health	≤ 70	1	1	100.0%	Excellent	N	Yes	1.00
Selenium (as Se)	ug/L	Chronic Health	≤ 40	1	1	100.0%	Excellent	N	Yes	10.00
Vanadium (as V)	ug/L	Chronic Health	≤ 200	0	0					
Cyanide	ug/L	Acute Health Chemical	≤ 200	1	1	100.0%	Excellent	N	Yes	20.00
Total Organic Carbon	mg/L	Chronic Health	≤ 10	1	1	100.0%	Excellent		Yes	1.90
Uranium (as U)	ug/L	Chronic Health	≤ 30	1	1	100.0%	Excellent	N	Yes	15.00
Barium (as Ba)	ug/L	Chronic Health	≤ 700	1	1	100.0%	Excellent	N	Yes	8.00
Boron (as B)	mg/L	Chronic Health	≤ 2.4	1	1	100.0%	Excellent	N	Yes	0.10
CaCO ₃ Precipitation Potential			-	0						
Microcystin (as LR)	ug/L	Chronic Health	≤ 1	1	1	100.0%	Excellent		Yes	0.15
Monochloramine	mg/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	0.05

Acute Health Chemical	5	5	100.0%	Excellent
Acute Health Microbiological	22	19	86.4%	Unacceptable
Chronic Health	24	24	100.0%	Excellent
Aesthetic	52	52	100.0%	Excellent
Operational Efficiency	84	77	91.7%	Good

Riebeek Wes			SANS 241:2015	Compliance Calculations						
Parameter	Unit	Risk	Standard Limits (SANS 241-2011 and SANS 241- 2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population < 100 000)	Risk Character P = prescribed monitoring R = identified risk N = negligible risk	Compliance Status (Yes / No)	Average
Conductivity	mS/m	Aesthetic	≤ 170	20	20	100.0%	Excellent	P/N	Yes	12.25
Turbidity	NTU	Operational	≤ 1	20	20	100.0%	Excellent	P/R	Yes	0.27
		Aesthetic	≤ 5	20	20	100.0%	Excellent	P/N	Yes	
pH (at 25°C)		Operational	≥ 5.0 - < 9.7	20	19	95.0%	Excellent	P	Yes	9.11
Heterotrophic Plate Count	cfu/ml	Operational	≤ 1000	20	20	100.0%	Excellent	P	Yes	4.35
E.Coli (<1 taken as 0)	cfu/100ml	Acute Health Micro	≤ 0	20	20	100.0%	Excellent	P	Yes	0.00
Total Coliform Count (<1 taken as 0)	cfu/100ml	Operational	≤ 10	20	20	100.0%	Excellent	N	Yes	0.15
Free Chlorine	mg/L	Chronic Health	≤ 5	1	1	100.0%	Excellent	N	Yes	0.13
Colour	mg/L	Aesthetic	≤ 15	1	1	100.0%	Excellent		Yes	4.00
Alkalinity (as CaCO ₃)	mg/L		-	1						18.00
Total Hardness (as CaCO ₃)	mg/L		-	0						
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	1	1	100.0%	Excellent		Yes	6.00
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	1	1	100.0%	Excellent		Yes	2.00
Sodium (as Na)	mg/L	Aesthetic	≤ 200	1	1	100.0%	Excellent	N	Yes	8.20
Potassium (as K)	mg/L	Operational / Health	≤ 50	1	1	100.0%	Excellent		Yes	0.71
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	1	1	100.0%	Excellent	N	Yes	0.00
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	18.40
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	1	1	100.0%	Excellent	R	Yes	0.16
		Acute Health Chemical	≤ 500	1	1	100.0%	Excellent	N	Yes	3.70
Sulphate (as SO ₄ ²⁻)	mg/L	Aesthetic	≤ 250	1	1	100.0%	Excellent	N	Yes	
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	1	1	100.0%	Excellent	N	Yes	86.00
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	1	1	100.0%	Excellent	N	Yes	0.10
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health Chemical	≤ 12	1	1	100.0%	Excellent	R	Yes	0.20
Iron (as Fe)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	24.00
		Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	
Manganese (as Mn)	ug/L	Chronic Health	≤ 400	1	1	100.0%	Excellent	N	Yes	19.00
		Aesthetic	< 100	1	1	100.0%	Excellent	R	Yes	
Aluminium (as Al)	ug/L	Operational	≤ 300	1	1	100.0%	Excellent		Yes	42.00
Cytopathogenic Viruses	cfu/10 l	Acute Health Micro	≤ 0	0						
Cryptosporidium Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Giardia Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Chloroform	ug/L	Chronic Health	≤ 300	1	1	100.0%	Excellent	N	Yes	29.00
Bromodichloromethane	ug/L	Chronic Health	≤ 60	1	1	100.0%	Excellent	N	Yes	10.00
Dibromochloromethane	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Bromoform	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Somatic Coliphages	cfu/10ml	Operational	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Combined Trihalomethanes	mg/L	Chronic Health	≤ 1	1	1	100.0%	Excellent	N	Yes	0.46
Phenols	ug/L	Aesthetic	≤ 10	1	1	100.0%	Excellent	N	Yes	0.01
Calcium Hardness (as CaCO ₃)	mg/L		-	0						
Magnesium Hardness (as CaCO ₃)	mg/L		-	0						
Nitrate as N	mg/L	Acute Health Chemical	≤ 11	1	1	100.0%	Excellent	R	Yes	0.20
Nitrite as N	mg/L	Acute Health Chemical	≤ 0.9	1	1	100.0%	Excellent	N	Yes	0.20
Antimony (as Sb)	ug/L	Chronic Health	≤ 20	1	1	100.0%	Excellent	N	Yes	10.00
Arsenic (as As)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	3.00
Cadmium (as Cd)	ug/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	1.00
Chromium (as Cr)	ug/L	Chronic Health	≤ 50	1	1	100.0%	Excellent	N	Yes	7.00
Cobalt (as Co)	ug/L	Chronic Health	≤ 500	0	0					
Copper (as Cu)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	6.00
Lead (as Pb)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	7.00
Mercury (as Hg)	ug/L	Chronic Health	≤ 6	1	1	100.0%	Excellent	N	Yes	5.00
Nickel (as Ni)	ug/L	Chronic Health	≤ 70	1	1	100.0%	Excellent	N	Yes	1.00
Selenium (as Se)	ug/L	Chronic Health	≤ 40	1	1	100.0%	Excellent	N	Yes	10.00
Vanadium (as V)	ug/L	Chronic Health	≤ 200	0	0					
Cyanide	ug/L	Acute Health Chemical	≤ 200	1	1	100.0%	Excellent	N	Yes	20.00
Total Organic Carbon	mg/L	Chronic Health	≤ 10	1	1	100.0%	Excellent		Yes	1.40
Uranium (as U)	ug/L	Chronic Health	≤ 30	1	1	100.0%	Excellent	N	Yes	15.00
Barium (as Ba)	ug/L	Chronic Health	≤ 700	1	1	100.0%	Excellent	N	Yes	8.00
Boron (as B)	mg/L	Chronic Health	≤ 2.4	1	1	100.0%	Excellent	N	Yes	0.10
CaCO ₃ Precipitation Potential			-	0						
Microcystin (as LR)	ug/L	Chronic Health	≤ 1	1	1	100.0%	Excellent		Yes	0.15
Monochloramine	mg/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	0.05

Acute Health Chemical	5	5	100.0%	Excellent
Acute Health Microbiological	22	22	100.0%	Excellent
Chronic Health	24	24	100.0%	Excellent
Aesthetic	52	52	100.0%	Excellent
Operational Efficiency	84	83	98.8%	Excellent

Yzerfontein			SANS 241:2015	Compliance Calculations						
Parameter	Unit	Risk	Standard Limits (SANS 241-2011 and SANS 241- 2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population < 100 000)	Risk Character P = prescribed monitoring R = identified risk N = negligible risk	Compliance Status (Yes / No)	Average
Conductivity	mS/m	Aesthetic	≤ 170	20	20	100.0%	Excellent	P/N	Yes	14.21
Turbidity	NTU	Operational	≤ 1	20	20	100.0%	Excellent	P/R	Yes	0.39
		Aesthetic	≤ 5	20	20	100.0%	Excellent	P/N	Yes	
pH (at 25°C)		Operational	≥5.0 - ≤ 9.7	20	7	35.0%	Unacceptable	P	No	9.73
Heterotrophic Plate Count	cfu/ml	Operational	≤ 1000	21	20	95.2%	Excellent	P	Yes	48.24
E.Coli (<1 taken as 0)	cfu/100ml	Acute Health Micro	≤ 0	21	21	100.0%	Excellent	P	Yes	0.00
Total Coliform Count (<1 taken as 0)	cfu/100ml	Operational	≤ 10	21	21	100.0%	Excellent	N	Yes	0.48
Free Chlorine	mg/L	Chronic Health	≤ 5	1	1	100.0%	Excellent	N	Yes	0.26
Colour	mg/L	Aesthetic	≤ 15	1	1	100.0%	Excellent		Yes	4.00
Alkalinity (as CaCO ₃)	mg/L		-	1						24.50
Total Hardness (as CaCO ₃)	mg/L		-	0						
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	1	1	100.0%	Excellent		Yes	9.50
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	1	1	100.0%	Excellent		Yes	1.70
Sodium (as Na)	mg/L	Aesthetic	≤ 200	1	1	100.0%	Excellent	N	Yes	7.90
Potassium (as K)	mg/L	Operational / Health	≤ 50	1	1	100.0%	Excellent		Yes	0.74
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	1	1	100.0%	Excellent	N	Yes	0.00
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	18.90
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	1	1	100.0%	Excellent	R	Yes	0.17
		Acute Health Chemical	≤ 500	1	1	100.0%	Excellent	N	Yes	3.70
Sulphate (as SO ₄ ²⁻)	mg/L	Aesthetic	≤ 250	1	1	100.0%	Excellent	N	Yes	
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	1	1	100.0%	Excellent	N	Yes	100.00
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	1	1	100.0%	Excellent	N	Yes	0.10
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health Chemical	≤ 12	1	1	100.0%	Excellent	R	Yes	0.20
Iron (as Fe)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	24.00
		Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	
Manganese (as Mn)	ug/L	Chronic Health	≤ 400	1	1	100.0%	Excellent	N	Yes	19.00
		Aesthetic	≤ 100	1	1	100.0%	Excellent	R	Yes	
Aluminium (as Al)	ug/L	Operational	≤300	1	1	100.0%	Excellent		Yes	51.00
Cytopathogenic Viruses	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Cryptosporidium Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Giardia Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Chloroform	ug/L	Chronic Health	≤ 300	1	1	100.0%	Excellent	N	Yes	20.00
Bromodichloromethane	ug/L	Chronic Health	≤ 60	1	1	100.0%	Excellent	N	Yes	10.00
Dibromochloromethane	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Bromoform	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Somatic Coliphages	cfu/10ml	Operational	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Combined Trihalomethanes	mg/L	Chronic Health	≤ 1	1	1	100.0%	Excellent	N	Yes	0.43
Phenols	ug/L	Aesthetic	≤10	1	1	100.0%	Excellent	N	Yes	0.01
Calcium Hardness (as CaCO ₃)	mg/L		-	0						
Magnesium Hardness (as CaCO ₃)	mg/L		-	0						
Nitrate as N	mg/L	Acute Health Chemical	≤ 11	1	1	100.0%	Excellent	R	Yes	0.20
Nitrite as N	mg/L	Acute Health Chemical	≤ 0.9	1	1	100.0%	Excellent	N	Yes	0.20
Antimony (as Sb)	ug/L	Chronic Health	≤ 20	1	1	100.0%	Excellent	N	Yes	10.00
Arsenic (as As)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	3.00
Cadmium (as Cd)	ug/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	1.00
Chromium (as Cr)	ug/L	Chronic Health	≤ 50	1	1	100.0%	Excellent	N	Yes	7.00
Cobalt (as Co)	ug/L	Chronic Health	≤ 500	0	0					
Copper (as Cu)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	9.00
Lead (as Pb)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	7.00
Mercury (as Hg)	ug/L	Chronic Health	≤ 6	1	1	100.0%	Excellent	N	Yes	5.00
Nickel (as Ni)	ug/L	Chronic Health	≤ 70	1	1	100.0%	Excellent	N	Yes	1.00
Selenium (as Se)	ug/L	Chronic Health	≤ 40	1	1	100.0%	Excellent	N	Yes	10.00
Vanadium (as V)	ug/L	Chronic Health	≤ 200	0	0					
Cyanide	ug/L	Acute Health Chemical	≤ 200	1	1	100.0%	Excellent	N	Yes	20.00
Total Organic Carbon	mg/L	Chronic Health	≤ 10	1	1	100.0%	Excellent		Yes	1.90
Uranium (as U)	ug/L	Chronic Health	≤ 30	1	1	100.0%	Excellent	N	Yes	15.00
Barium (as Ba)	ug/L	Chronic Health	≤ 700	1	1	100.0%	Excellent	N	Yes	9.00
Boron (as B)	mg/L	Chronic Health	≤ 2.4	1	1	100.0%	Excellent	N	Yes	0.10
CaCO ₃ Precipitation Potential			-	0						
Microcystin (as LR)	ug/L	Chronic Health	≤ 1	1	1	100.0%	Excellent		Yes	0.15
Monochloramine	mg/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	0.05

Acute Health Chemical	5	5	100.0%	Excellent
Acute Health Microbiological	23	23	100.0%	Excellent
Chronic Health	24	24	100.0%	Excellent
Aesthetic	52	52	100.0%	Excellent
Operational Efficiency	86	72	83.7%	Unacceptable

Riverlands			SANS 241:2015	Compliance Calculations						
Parameter	Unit	Risk	Standard Limits (SANS 241-2011 and SANS 241- 2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population < 100 000)	Risk Character P = prescribed monitoring R = identified risk N = negligible risk	Compliance Status (Yes / No)	Average
Conductivity	mS/m	Aesthetic	≤ 170	20	20	100.0%	Excellent	P/N	Yes	19.39
Turbidity	NTU	Operational	≤ 1	20	15	75.0%	Unacceptable	P/R	No	2.13
		Aesthetic	≤ 5	20	19	95.0%	Excellent	P/N	Yes	
pH (at 25°C)		Operational	≥5.0 - ≤ 9.7	20	19	95.0%	Excellent	P	Yes	8.77
Heterotrophic Plate Count	cfu/ml	Operational	≤ 1000	20	19	95.0%	Excellent	P	Yes	70.70
E.Coli (<1 taken as 0)	cfu/100ml	Acute Health Micro	≤ 0	20	18	90.0%	Unacceptable	P	No	0.20
Total Coliform Count (<1 taken as 0)	cfu/100ml	Operational	≤ 10	20	19	95.0%	Excellent	N	Yes	0.90
Free Chlorine	mg/L	Chronic Health	≤ 5	1	1	100.0%	Excellent	N	Yes	0.05
Colour	mg/L	Aesthetic	≤ 15	1	1	100.0%	Excellent		Yes	4.00
Alkalinity (as CaCO ₃)	mg/L		-	1						28.80
Total Hardness (as CaCO ₃)	mg/L		-	0						
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	1	1	100.0%	Excellent		Yes	9.70
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	1	1	100.0%	Excellent		Yes	1.80
Sodium (as Na)	mg/L	Aesthetic	≤ 200	1	1	100.0%	Excellent	N	Yes	21.00
Potassium (as K)	mg/L	Operational / Health	≤ 50	1	1	100.0%	Excellent		Yes	1.00
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	1	1	100.0%	Excellent	N	Yes	0.00
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	37.70
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	1	1	100.0%	Excellent	R	Yes	0.30
		Acute Health Chemical	≤ 500	1	1	100.0%	Excellent	N	Yes	
Sulphate (as SO ₄ ²⁻)	mg/L	Aesthetic	≤ 250	1	1	100.0%	Excellent	N	Yes	
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	1	1	100.0%	Excellent	N	Yes	143.00
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	1	1	100.0%	Excellent	N	Yes	0.10
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health Chemical	≤ 12	1	1	100.0%	Excellent	R	Yes	0.20
Iron (as Fe)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	44.00
		Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	
Manganese (as Mn)	ug/L	Chronic Health	≤ 400	1	1	100.0%	Excellent	N	Yes	19.00
		Aesthetic	≤ 100	1	1	100.0%	Excellent	R	Yes	
Aluminium (as Al)	ug/L	Operational	≤ 300	1	1	100.0%	Excellent		Yes	27.00
Cytopathogenic Viruses	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Cryptosporidium Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Giardia Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Chloroform	ug/L	Chronic Health	≤ 300	1	1	100.0%	Excellent	N	Yes	18.00
Bromodichloromethane	ug/L	Chronic Health	≤ 60	1	1	100.0%	Excellent	N	Yes	10.00
Dibromochloromethane	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Bromoform	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Somatic Coliphages	cfu/10ml	Operational	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Combined Trihalomethanes	mg/L	Chronic Health	≤ 1	1	1	100.0%	Excellent	N	Yes	0.43
Phenols	ug/L	Aesthetic	≤ 10	1	1	100.0%	Excellent	N	Yes	0.01
Calcium Hardness (as CaCO ₃)	mg/L		-	0						
Magnesium Hardness (as CaCO ₃)	mg/L		-	0						
Nitrate as N	mg/L	Acute Health Chemical	≤ 11	1	1	100.0%	Excellent	R	Yes	0.20
Nitrite as N	mg/L	Acute Health Chemical	≤ 0.9	1	1	100.0%	Excellent	N	Yes	0.20
Antimony (as Sb)	ug/L	Chronic Health	≤ 20	1	1	100.0%	Excellent	N	Yes	10.00
Arsenic (as As)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	3.00
Cadmium (as Cd)	ug/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	1.00
Chromium (as Cr)	ug/L	Chronic Health	≤ 50	1	1	100.0%	Excellent	N	Yes	7.00
Cobalt (as Co)	ug/L	Chronic Health	≤ 500	0	0					
Copper (as Cu)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	6.00
Lead (as Pb)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	7.00
Mercury (as Hg)	ug/L	Chronic Health	≤ 6	1	1	100.0%	Excellent	N	Yes	5.00
Nickel (as Ni)	ug/L	Chronic Health	≤ 70	1	1	100.0%	Excellent	N	Yes	1.00
Selenium (as Se)	ug/L	Chronic Health	≤ 40	1	1	100.0%	Excellent	N	Yes	10.00
Vanadium (as V)	ug/L	Chronic Health	≤ 200	0	0					
Cyanide	ug/L	Acute Health Chemical	≤ 200	1	1	100.0%	Excellent	N	Yes	20.00
Total Organic Carbon	mg/L	Chronic Health	≤ 10	1	1	100.0%	Excellent		Yes	0.10
Uranium (as U)	ug/L	Chronic Health	≤ 30	1	1	100.0%	Excellent	N	Yes	15.00
Barium (as Ba)	ug/L	Chronic Health	≤ 700	1	1	100.0%	Excellent	N	Yes	16.00
Boron (as B)	mg/L	Chronic Health	≤ 2.4	1	1	100.0%	Excellent	N	Yes	0.10
CaCO ₃ Precipitation Potential			-	0						
Microcystin (as LR)	ug/L	Chronic Health	≤ 1	1	1	100.0%	Excellent		Yes	0.15
Monochloramine	mg/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	0.05

Acute Health Chemical	5	5	100.0%	Excellent
Acute Health Microbiological	22	20	90.9%	Unacceptable
Chronic Health	24	24	100.0%	Excellent
Aesthetic	52	51	98.1%	Excellent
Operational Efficiency	84	76	90.5%	Good

Abbotsdale			SANS 241:2015	Compliance Calculations						
Parameter	Unit	Risk	Standard Limits (SANS 241-2011 and SANS 241- 2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population < 100 000)	Risk Character P = prescribed monitoring R = identified risk N = negligible risk	Compliance Status (Yes / No)	Average
Conductivity	mS/m	Aesthetic	≤ 170	19	19	100.0%	Excellent	P/N	Yes	13.37
Turbidity	NTU	Operational	≤ 1	19	13	68.4%	Unacceptable	P/R	No	1.16
		Aesthetic	≤ 5	19	19	100.0%	Excellent	P/N	Yes	
pH (at 25°C)		Operational	≥5.0 - ≤ 9.7	19	17	89.5%	Unacceptable	P	No	8.98
Heterotrophic Plate Count	cfu/ml	Operational	≤ 1000	19	19	100.0%	Excellent	P	Yes	13.68
E.Coli (<1 taken as 0)	cfu/100ml	Acute Health Micro	≤ 0	19	18	94.7%	Unacceptable	P	No	0.16
Total Coliform Count (<1 taken as 0)	cfu/100ml	Operational	≤ 10	19	19	100.0%	Excellent	N	Yes	1.11
Free Chlorine	mg/L	Chronic Health	≤ 5	1	1	100.0%	Excellent	N	Yes	0.05
Colour	mg/L	Aesthetic	≤ 15	1	1	100.0%	Excellent		Yes	11.00
Alkalinity (as CaCO ₃)	mg/L		-	1						
Total Hardness (as CaCO ₃)	mg/L		-	0						
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	1	1	100.0%	Excellent		Yes	8.20
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	1	1	100.0%	Excellent		Yes	2.00
Sodium (as Na)	mg/L	Aesthetic	≤ 200	1	1	100.0%	Excellent	N	Yes	11.50
Potassium (as K)	mg/L	Operational / Health	≤ 50	1	1	100.0%	Excellent		Yes	0.91
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	1	1	100.0%	Excellent	N	Yes	0.02
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	19.90
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	1	1	100.0%	Excellent	R	Yes	0.19
		Acute Health Chemical	≤ 500	1	1	100.0%	Excellent	N	Yes	
Sulphate (as SO ₄ ²⁻)	mg/L	Aesthetic	≤ 250	1	1	100.0%	Excellent	N	Yes	3.60
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	1	1	100.0%	Excellent	N	Yes	100.00
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	1	1	100.0%	Excellent	N	Yes	0.10
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health Chemical	≤ 12	1	1	100.0%	Excellent	R	Yes	0.20
Iron (as Fe)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	152.00
		Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	
Manganese (as Mn)	ug/L	Chronic Health	≤ 400	1	1	100.0%	Excellent	N	Yes	19.00
		Aesthetic	≤ 100	1	1	100.0%	Excellent	R	Yes	
Aluminium (as Al)	ug/L	Operational	≤ 300	1	1	100.0%	Excellent		Yes	60.00
Cytopathogenic Viruses	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Cryptosporidium Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Giardia Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Chloroform	ug/L	Chronic Health	≤ 300	1	1	100.0%	Excellent	N	Yes	18.00
Bromodichloromethane	ug/L	Chronic Health	≤ 60	1	1	100.0%	Excellent	N	Yes	10.00
Dibromochloromethane	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Bromoform	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Somatic Coliphages	cfu/10ml	Operational	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Combined Trihalomethanes	mg/L	Chronic Health	≤ 1	1	1	100.0%	Excellent	N	Yes	0.43
Phenols	ug/L	Aesthetic	≤ 10	1	1	100.0%	Excellent	N	Yes	0.01
Calcium Hardness (as CaCO ₃)	mg/L		-	0						
Magnesium Hardness (as CaCO ₃)	mg/L		-	0						
Nitrate as N	mg/L	Acute Health Chemical	≤ 11	1	1	100.0%	Excellent	R	Yes	0.20
Nitrite as N	mg/L	Acute Health Chemical	≤ 0.9	1	1	100.0%	Excellent	N	Yes	0.20
Antimony (as Sb)	ug/L	Chronic Health	≤ 20	1	1	100.0%	Excellent	N	Yes	10.00
Arsenic (as As)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	3.00
Cadmium (as Cd)	ug/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	1.00
Chromium (as Cr)	ug/L	Chronic Health	≤ 50	1	1	100.0%	Excellent	N	Yes	7.00
Cobalt (as Co)	ug/L	Chronic Health	≤ 500	0	0					
Copper (as Cu)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	6.00
Lead (as Pb)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	7.00
Mercury (as Hg)	ug/L	Chronic Health	≤ 6	1	1	100.0%	Excellent	N	Yes	5.00
Nickel (as Ni)	ug/L	Chronic Health	≤ 70	1	1	100.0%	Excellent	N	Yes	1.00
Selenium (as Se)	ug/L	Chronic Health	≤ 40	1	1	100.0%	Excellent	N	Yes	10.00
Vanadium (as V)	ug/L	Chronic Health	≤ 200	0	0					
Cyanide	ug/L	Acute Health Chemical	≤ 200	1	1	100.0%	Excellent	N	Yes	20.00
Total Organic Carbon	mg/L	Chronic Health	≤ 10	1	1	100.0%	Excellent		Yes	1.80
Uranium (as U)	ug/L	Chronic Health	≤ 30	1	1	100.0%	Excellent	N	Yes	15.00
Barium (as Ba)	ug/L	Chronic Health	≤ 700	1	1	100.0%	Excellent	N	Yes	9.00
Boron (as B)	mg/L	Chronic Health	≤ 2.4	1	1	100.0%	Excellent	N	Yes	0.10
CaCO ₃ Precipitation Potential			-	0						
Microcystin (as LR)	ug/L	Chronic Health	≤ 1	1	1	100.0%	Excellent		Yes	0.15
Monochloramine	mg/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	0.05

Acute Health Chemical	5	5	100.0%	Excellent
Acute Health Microbiological	21	20	95.2%	Good
Chronic Health	24	24	100.0%	Excellent
Aesthetic	50	50	100.0%	Excellent
Operational Efficiency	80	72	90.0%	Good

Chatsworth			SANS 241:2015	Compliance Calculations						
Parameter	Unit	Risk	Standard Limits (SANS 241-2011 and SANS 241- 2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population < 100 000)	Risk Character P = prescribed monitoring R = identified risk N = negligible risk	Compliance Status (Yes / No)	Average
Conductivity	mS/m	Aesthetic	≤ 170	20	20	100.0%	Excellent	P/N	Yes	19.45
Turbidity	NTU	Operational	≤ 1	20	16	80.0%	Unacceptable	P/R	No	0.61
		Aesthetic	≤ 5	20	20	100.0%	Excellent	P/N	Yes	
pH (at 25°C)		Operational	≥5.0 - ≤ 9.7	20	19	95.0%	Excellent	P	Yes	8.67
Heterotrophic Plate Count	cfu/ml	Operational	≤ 1000	20	19	95.0%	Excellent	P	Yes	70.05
E.Coli (<1 taken as 0)	cfu/100ml	Acute Health Micro	≤ 0	20	18	90.0%	Unacceptable	P	No	0.30
Total Coliform Count (<1 taken as 0)	cfu/100ml	Operational	≤ 10	20	19	95.0%	Excellent	N	Yes	1.45
Free Chlorine	mg/L	Chronic Health	≤ 5	1	1	100.0%	Excellent	N	Yes	0.05
Colour	mg/L	Aesthetic	≤ 15	1	1	100.0%	Excellent		Yes	4.00
Alkalinity (as CaCO ₃)	mg/L		-	1						26.10
Total Hardness (as CaCO ₃)	mg/L		-	0						
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	1	1	100.0%	Excellent		Yes	9.40
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	1	1	100.0%	Excellent		Yes	1.80
Sodium (as Na)	mg/L	Aesthetic	≤ 200	1	1	100.0%	Excellent	N	Yes	22.30
Potassium (as K)	mg/L	Operational / Health	≤ 50	1	1	100.0%	Excellent		Yes	1.00
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	1	1	100.0%	Excellent	N	Yes	0.01
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	37.60
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	1	1	100.0%	Excellent	R	Yes	0.31
Sulphate (as SO ₄ ²⁻)	mg/L	Acute Health Chemical	≤ 500	1	1	100.0%	Excellent	N	Yes	3.70
		Aesthetic	≤ 250	1	1	100.0%	Excellent	N	Yes	
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	1	1	100.0%	Excellent	N	Yes	143.00
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	1	1	100.0%	Excellent	N	Yes	0.11
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health Chemical	≤ 12	1	1	100.0%	Excellent	R	Yes	0.20
Iron (as Fe)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	33.00
		Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	
Manganese (as Mn)	ug/L	Chronic Health	≤ 400	1	1	100.0%	Excellent	N	Yes	19.00
		Aesthetic	≤ 100	1	1	100.0%	Excellent	R	Yes	
Aluminium (as Al)	ug/L	Operational	≤ 300	1	1	100.0%	Excellent		Yes	31.00
Cytopathogenic Viruses	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Cryptosporidium Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Giardia Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Chloroform	ug/L	Chronic Health	≤ 300	1	1	100.0%	Excellent	N	Yes	15.00
Bromodichloromethane	ug/L	Chronic Health	≤ 60	1	1	100.0%	Excellent	N	Yes	10.00
Dibromochloromethane	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Bromoform	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Somatic Coliphages	cfu/10ml	Operational	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Combined Trihalomethanes	mg/L	Chronic Health	≤ 1	1	1	100.0%	Excellent	N	Yes	0.42
Phenols	ug/L	Aesthetic	≤ 10	1	1	100.0%	Excellent	N	Yes	0.01
Calcium Hardness (as CaCO ₃)	mg/L		-	0						
Magnesium Hardness (as CaCO ₃)	mg/L		-	0						
Nitrate as N	mg/L	Acute Health Chemical	≤ 11	1	1	100.0%	Excellent	R	Yes	0.20
Nitrite as N	mg/L	Acute Health Chemical	≤ 0.9	1	1	100.0%	Excellent	N	Yes	0.20
Antimony (as Sb)	ug/L	Chronic Health	≤ 20	1	1	100.0%	Excellent	N	Yes	10.00
Arsenic (as As)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	3.00
Cadmium (as Cd)	ug/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	1.00
Chromium (as Cr)	ug/L	Chronic Health	≤ 50	1	1	100.0%	Excellent	N	Yes	7.00
Cobalt (as Co)	ug/L	Chronic Health	≤ 500	0	0					
Copper (as Cu)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	6.00
Lead (as Pb)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	7.00
Mercury (as Hg)	ug/L	Chronic Health	≤ 6	1	1	100.0%	Excellent	N	Yes	5.00
Nickel (as Ni)	ug/L	Chronic Health	≤ 70	1	1	100.0%	Excellent	N	Yes	1.00
Selenium (as Se)	ug/L	Chronic Health	< 40	1	1	100.0%	Excellent	N	Yes	10.00
Vanadium (as V)	ug/L	Chronic Health	≤ 200	0	0					
Cyanide	ug/L	Acute Health Chemical	≤ 200	1	1	100.0%	Excellent	N	Yes	20.00
Total Organic Carbon	mg/L	Chronic Health	≤ 10	1	1	100.0%	Excellent		Yes	1.90
Uranium (as U)	ug/L	Chronic Health	≤ 30	1	1	100.0%	Excellent	N	Yes	15.00
Barium (as Ba)	ug/L	Chronic Health	≤ 700	1	1	100.0%	Excellent	N	Yes	16.00
Boron (as B)	mg/L	Chronic Health	≤ 2.4	1	1	100.0%	Excellent	N	Yes	0.10
CaCO ₃ Precipitation Potential			-	0						
Microcystin (as LR)	ug/L	Chronic Health	≤ 1	1	1	100.0%	Excellent		Yes	0.15
Monochloramine	mg/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	0.05

Acute Health Chemical	5	5	100.0%	Excellent
Acute Health Microbiological	22	20	90.9%	Unacceptable
Chronic Health	24	24	100.0%	Excellent
Aesthetic	52	52	100.0%	Excellent
Operational Efficiency	84	77	91.7%	Good

Kalbaskraal			SANS 241:2015	Compliance Calculations						
Parameter	Unit	Risk	Standard Limits (SANS 241-2011 and SANS 241- 2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population < 100 000)	Risk Character P = prescribed monitoring R = identified risk N = negligible risk	Compliance Status (Yes / No)	Average
Conductivity	mS/m	Aesthetic	≤ 170	20	20	100.0%	Excellent	P/N	Yes	13.89
Turbidity	NTU	Operational	≤ 1	20	18	90.0%	Good	P/R	Yes	0.64
		Aesthetic	≤ 5	20	19	95.0%	Excellent	P/N	Yes	
pH (at 25°C)		Operational	≥ 5.0 - ≤ 9.7	20	18	90.0%	Good	P	Yes	9.14
Heterotrophic Plate Count	cfu/ml	Operational	≤ 1000	20	19	95.0%	Excellent	P	Yes	146.90
E.Coli (<1 taken as 0)	cfu/100ml	Acute Health Micro	≤ 0	20	19	95.0%	Good	P	Yes	0.10
Total Coliform Count (<1 taken as 0)	cfu/100ml	Operational	≤ 10	20	19	95.0%	Excellent	N	Yes	122.55
Free Chlorine	mg/L	Chronic Health	≤ 5	1	1	100.0%	Excellent	N	Yes	0.05
Colour	mg/L	Aesthetic	≤ 15	1	1	100.0%	Excellent		Yes	4.00
Alkalinity (as CaCO ₃)	mg/L		-	1						20.80
Total Hardness (as CaCO ₃)	mg/L		-	0						
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	1	1	100.0%	Excellent		Yes	8.00
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	1	1	100.0%	Excellent		Yes	1.60
Sodium (as Na)	mg/L	Aesthetic	≤ 200	1	1	100.0%	Excellent	N	Yes	8.30
Potassium (as K)	mg/L	Operational / Health	≤ 50	1	1	100.0%	Excellent		Yes	0.75
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	1	1	100.0%	Excellent	N	Yes	0.03
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	19.20
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	1	1	100.0%	Excellent	R	Yes	0.19
Sulphate (as SO ₄ ²⁻)	mg/L	Acute Health Chemical	≤ 500	1	1	100.0%	Excellent	N	Yes	3.80
		Aesthetic	≤ 250	1	1	100.0%	Excellent	N	Yes	
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	1	1	100.0%	Excellent	N	Yes	93.00
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	1	1	100.0%	Excellent	N	Yes	0.10
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health Chemical	≤ 12	1	1	100.0%	Excellent	R	Yes	0.20
Iron (as Fe)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	24.00
		Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	
Manganese (as Mn)	ug/L	Chronic Health	≤ 400	1	1	100.0%	Excellent	N	Yes	19.00
		Aesthetic	< 100	1	1	100.0%	Excellent	R	Yes	
Aluminium (as Al)	ug/L	Operational	≤ 300	1	1	100.0%	Excellent		Yes	55.00
Cytopathogenic Viruses	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Cryptosporidium Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Giardia Species	cfu/10 l	Acute Health Micro	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Chloroform	ug/L	Chronic Health	≤ 300	1	1	100.0%	Excellent	N	Yes	18.00
Bromodichloromethane	ug/L	Chronic Health	≤ 60	1	1	100.0%	Excellent	N	Yes	10.00
Dibromochloromethane	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Bromoform	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	10.00
Somatic Coliphages	cfu/10ml	Operational	≤ 0	1	1	100.0%	Excellent		Yes	0.00
Combined Trihalomethanes	mg/L	Chronic Health	≤ 1	1	1	100.0%	Excellent	N	Yes	0.43
Phenols	ug/L	Aesthetic	≤ 10	1	1	100.0%	Excellent	N	Yes	0.01
Calcium Hardness (as CaCO ₃)	mg/L		-	0						
Magnesium Hardness (as CaCO ₃)	mg/L		-	0						
Nitrate as N	mg/L	Acute Health Chemical	≤ 11	1	1	100.0%	Excellent	R	Yes	0.20
Nitrite as N	mg/L	Acute Health Chemical	≤ 0.9	1	1	100.0%	Excellent	N	Yes	0.20
Antimony (as Sb)	ug/L	Chronic Health	≤ 20	1	1	100.0%	Excellent	N	Yes	10.00
Arsenic (as As)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	3.00
Cadmium (as Cd)	ug/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	1.00
Chromium (as Cr)	ug/L	Chronic Health	≤ 50	1	1	100.0%	Excellent	N	Yes	7.00
Cobalt (as Co)	ug/L	Chronic Health	≤ 500	0	0					
Copper (as Cu)	ug/L	Chronic Health	≤ 2000	1	1	100.0%	Excellent	N	Yes	23.00
Lead (as Pb)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	7.00
Mercury (as Hg)	ug/L	Chronic Health	≤ 6	1	1	100.0%	Excellent	N	Yes	5.00
Nickel (as Ni)	ug/L	Chronic Health	≤ 70	1	1	100.0%	Excellent	N	Yes	1.00
Selenium (as Se)	ug/L	Chronic Health	≤ 40	1	1	100.0%	Excellent	N	Yes	10.00
Vanadium (as V)	ug/L	Chronic Health	≤ 200	0	0					
Cyanide	ug/L	Acute Health Chemical	≤ 200	1	1	100.0%	Excellent	N	Yes	20.00
Total Organic Carbon	mg/L	Chronic Health	≤ 10	1	1	100.0%	Excellent		Yes	3.60
Uranium (as U)	ug/L	Chronic Health	≤ 30	1	1	100.0%	Excellent	N	Yes	15.00
Barium (as Ba)	ug/L	Chronic Health	≤ 700	1	1	100.0%	Excellent	N	Yes	8.00
Boron (as B)	mg/L	Chronic Health	≤ 2.4	1	1	100.0%	Excellent	N	Yes	0.10
CaCO ₃ Precipitation Potential			-	0						
Microcystin (as LR)	ug/L	Chronic Health	≤ 1	1	1	100.0%	Excellent		Yes	0.15
Monochloramine	mg/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	0.05

Acute Health Chemical	5	5	100.0%	Excellent
Acute Health Microbiological	22	21	95.5%	Good
Chronic Health	24	24	100.0%	Excellent
Aesthetic	52	51	98.1%	Excellent
Operational Efficiency	84	78	92.9%	Good