

Beaufort West			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	134	122	91.0%	Good	P/N	Yes	103.85
Turbidity	NTU	Operational	≤ 1	134	105	78.4%	Unacceptable	P/R	No	0.91
		Aesthetic	≤ 5	134	131	97.8%	Excellent	P/R	Yes	
pH (at 25°C)		Operational	≥5.0 - ≤ 9.7	134	134	100.0%	Excellent	P	Yes	7.49
Heterotrophic Plate Count	cfu/ml	Operational	≤ 1000	0	0			P		
E.Coli (<1 taken as 0)	cfu/100ml	Acute Health Micro	≤ 0	144	144	100.0%	Excellent	P	Yes	0.00
Total Coliform Count (<1 taken as 0)	cfu/100ml	Operational	≤ 10	144	135	93.8%	Excellent	N	Yes	5.06
Total Chlorine	mg/L	Chronic Health	≤ 5	2	2	100.0%	Excellent	N	Yes	0.30
Colour	mg/L	Aesthetic	≤ 15	2	2	100.0%	Excellent		Yes	10.00
Alkalinity (as CaCO ₃)	mg/L		-	0						
Total Hardness (as CaCO ₃)	mg/L		-	0						
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	0	0					
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	0	0					
Sodium (as Na)	mg/L	Aesthetic	≤ 200	2	2	100.0%	Excellent	N	Yes	47.15
Potassium (as K)	mg/L	Operational / Health	≤ 50	0	0					
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	2	2	100.0%	Excellent	N	Yes	0.05
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	2	2	100.0%	Excellent	R	Yes	64.65
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	2	2	100.0%	Excellent	R	Yes	0.68
Sulphate (as SO ₄ ²⁻)	mg/L	Acute Health Chemical	≤ 500	8	8	100.0%	Excellent	N	Yes	106.41
		Aesthetic	≤ 250	8	8	100.0%	Excellent	N	Yes	
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	2	2	100.0%	Excellent	N	Yes	379.00
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	2.89
Iron (as Fe)	ug/L	Chronic Health	≤ 2000	134	134	100.0%	Excellent	N	Yes	22.36
		Aesthetic	≤ 300	134	134	100.0%	Excellent	R	Yes	
Manganese (as Mn)	ug/L	Chronic Health	≤ 400	134	134	100.0%	Excellent	N	Yes	20.00
		Aesthetic	< 100	134	134	100.0%	Excellent	R	Yes	
Aluminium (as Al)	ug/L	Operational	≤300	134	134	100.0%	Excellent		Yes	60.54
Cytopathogenic Viruses	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Cryptosporidium Species	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Giardia Species	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Chloroform	ug/L	Chronic Health	≤ 300	2	2	100.0%	Excellent	N	Yes	20.00
Bromodichloromethane	ug/L	Chronic Health	≤ 60	2	2	100.0%	Excellent	N	Yes	50.00
Dibromochloromethane	ug/L	Chronic Health	≤ 100	2	2	100.0%	Excellent	N	Yes	63.00
Bromoform	ug/L	Chronic Health	≤ 100	2	2	100.0%	Excellent	N	Yes	25.50
Somatic Coliphages	cfu/10ml	Operational	≤ 0	0	0					
Total THM ratio	Calc	Chronic Health	≤ 1	2	0	0.0%	Unacceptable	N	No	1.80
Phenols	ug/L	Aesthetic	≤10	2	2	100.0%	Excellent	N	Yes	10.00
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	2.89
Nitrite as N	mg/L	Acute Health Chemical	≤ 0.9	2	2	100.0%	Excellent	N	Yes	0.05
Antimony (as Sb)	ug/L	Chronic Health	≤ 20	2	2	100.0%	Excellent	N	Yes	5.00
Arsenic (as As)	ug/L	Chronic Health	≤ 10	2	2	100.0%	Excellent	N	Yes	5.00
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	5.00
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	20.00
Lead (as Pb)	ug/L	Chronic Health	≤ 10	2	2	100.0%	Excellent	N	Yes	3.00
Mercury (as Hg)	ug/L	Chronic Health	≤ 6	2	2	100.0%	Excellent	N	Yes	1.00
Nickel (as Ni)	ug/L	Chronic Health	≤ 70	2	2	100.0%	Excellent	N	Yes	5.00
Selenium (as Se)	ug/L	Chronic Health	≤ 40	2	2	100.0%	Excellent	N	Yes	20.00
Vanadium (as V)	ug/L	Chronic Health	≤ 200	0	0					
Cyanide	ug/L	Acute Health Chemical	≤ 200	2	2	100.0%	Excellent	N	Yes	10.00
Total Organic Carbon	mg/L	Chronic Health	≤ 10	0	0					
Uranium (as U)	ug/L	Chronic Health	≤ 30	2	2	100.0%	Excellent	N	Yes	5.00
Barium (as Ba)	ug/L	Chronic Health	≤ 700	2	2	100.0%	Excellent	N	Yes	50.00
Boron (as B)	mg/L	Chronic Health	≤ 2.4	2	2	100.0%	Excellent	N	Yes	0.11
CaCO ₃ Precipitation Potential			-	0						
Microcystin (as LR)	ug/L	Chronic Health	≤ 1	2	2	100.0%	Excellent		Yes	1.00
Monochloramine	mg/L	Chronic Health	≤ 3	2	2	100.0%	Excellent	N	Yes	0.09

Acute Health Chemical	16	16	100.0%	Excellent
Acute Health Microbiological	144	144	100.0%	Excellent
Chronic Health	310	308	99.4%	Excellent
Aesthetic	558	543	97.3%	Excellent
Operational Efficiency	546	508	93.0%	Excellent

Murraysburg			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	12	12	100.0%	Excellent	P/N	Yes	6.04
Turbidity	NTU	Operational	≤ 1	12	12	100.0%	Excellent	P/R	Yes	0.19
		Aesthetic	≤ 5	12	12	100.0%	Excellent	P/R	Yes	
pH (at 25°C)		Operational	≥5.0 - ≤ 9.7	12	12	100.0%	Excellent	P	Yes	6.15
Heterotrophic Plate Count	cfu/ml	Operational	≤ 1000	0	0			P		
E.Coli (<1 taken as 0)	cfu/100ml	Acute Health Micro	≤ 0	12	12	100.0%	Excellent	P	Yes	0.00
Total Coliform Count (<1 taken as 0)	cfu/100ml	Operational	≤ 10	12	12	100.0%	Excellent	N	Yes	0.00
Free Chlorine	mg/L	Chronic Health	≤ 5	0	0			N	Yes	
Colour	mg/L	Aesthetic	≤ 15	12	12	100.0%	Excellent		Yes	4.00
Alkalinity (as CaCO ₃)	mg/L		-	0						
Total Hardness (as CaCO ₃)	mg/L		-	0						
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	0	0					
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	0	0					
Sodium (as Na)	mg/L	Aesthetic	≤ 200	12	12	100.0%	Excellent	N	Yes	10.25
Potassium (as K)	mg/L	Operational / Health	≤ 50	0	0					
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	12	12	100.0%	Excellent	N	Yes	0.02
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	12	12	100.0%	Excellent	R	Yes	10.03
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	12	12	100.0%	Excellent	R	Yes	0.50
Sulphate (as SO ₄ ²⁻)	mg/L	Acute Health Chemical	≤ 500	12	12	100.0%	Excellent	N	Yes	2.25
		Aesthetic	≤ 250	12	12	100.0%	Excellent	N	Yes	
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	12	12	100.0%	Excellent	N	Yes	38.67
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	12	12	100.0%	Excellent	N	Yes	0.29
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health Chemical	≤ 12	12	12	100.0%	Excellent	R	Yes	1.50
Iron (as Fe)	ug/L	Chronic Health	≤ 2000	12	12	100.0%	Excellent	N	Yes	55.75
		Aesthetic	≤ 300	12	12	100.0%	Excellent	R	Yes	
Manganese (as Mn)	ug/L	Chronic Health	≤ 400	12	12	100.0%	Excellent	N	Yes	23.75
		Aesthetic	< 100	12	12	100.0%	Excellent	R	Yes	
Aluminium (as Al)	ug/L	Operational	≤300	12	12	100.0%	Excellent		Yes	47.08
Cytopathogenic Viruses	cfu/10 l	Acute Health Micro	≤ 0	12	12	100.0%	Excellent			
Cryptosporidium Species	cfu/10 l	Acute Health Micro	≤ 0	12	12	100.0%	Excellent		Yes	0.00
Giardia Species	cfu/10 l	Acute Health Micro	≤ 0	12	12	100.0%	Excellent		Yes	0.00
Chloroform	ug/L	Chronic Health	≤ 300	0	0			N	Yes	
Bromodichloromethane	ug/L	Chronic Health	≤ 60	0	0			N	Yes	
Dibromochloromethane	ug/L	Chronic Health	≤ 100	0	0			N	Yes	
Bromoform	ug/L	Chronic Health	≤ 100	0	0			N	Yes	
Somatic Coliphages	cfu/10ml	Operational	≤ 0	0	0				Yes	
Combined Trihalomethanes	mg/L	Chronic Health	≤ 1	0	0			N	Yes	
Phenols	ug/L	Aesthetic	≤10	0	0			N	Yes	
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	12	12	100.0%	Excellent	R	Yes	1.34
Nitrite as N	mg/L	Acute Health Chemical	≤ 0.9	12	12	100.0%	Excellent	N	Yes	0.21
Antimony (as Sb)	ug/L	Chronic Health	≤ 20	12	12	100.0%	Excellent	N	Yes	19.17
Arsenic (as As)	ug/L	Chronic Health	≤ 10	12	12	100.0%	Excellent	N	Yes	10.00
Cadmium (as Cd)	ug/L	Chronic Health	≤ 3	12	12	100.0%	Excellent	N	Yes	2.67
Chromium (as Cr)	ug/L	Chronic Health	≤ 50	12	12	100.0%	Excellent	N	Yes	20.00
Cobalt (as Co)	ug/L	Chronic Health	≤ 500	12	12	100.0%	Excellent		Yes	20.00
Copper (as Cu)	ug/L	Chronic Health	≤ 2000	12	12	100.0%	Excellent	N	Yes	20.00
Lead (as Pb)	ug/L	Chronic Health	≤ 10	11	11	100.0%	Excellent	N	Yes	10.00
Mercury (as Hg)	ug/L	Chronic Health	≤ 6	10	10	100.0%	Excellent	N	Yes	5.00
Nickel (as Ni)	ug/L	Chronic Health	≤ 70	12	12	100.0%	Excellent	N	Yes	22.33
Selenium (as Se)	ug/L	Chronic Health	≤ 40	12	12	100.0%	Excellent	N	Yes	10.00
Vanadium (as V)	ug/L	Chronic Health	≤ 200	12	12	100.0%	Excellent		Yes	9.33
Cyanide	ug/L	Acute Health Chemical	≤ 200	12	12	100.0%	Excellent	N	Yes	20.00
Total Organic Carbon	mg/L	Chronic Health	≤ 10	12	12	100.0%	Excellent		Yes	0.25
Uranium (as U)	ug/L	Chronic Health	≤ 30	12	12	100.0%	Excellent	N	Yes	15.00
Barium (as Ba)	ug/L	Chronic Health	≤ 700	12	12	100.0%	Excellent	N	Yes	23.58
Boron (as B)	mg/L	Chronic Health	≤ 2.4	12	12	100.0%	Excellent	N	Yes	0.21
CaCO ₃ Precipitation Potential			-	0						
Microcystin (as LR)	ug/L	Chronic Health	≤ 1	0	0					
Monochloramine	mg/L	Chronic Health	≤ 3	0	0			N		

Acute Health Chemical	60	60	100.0%	Excellent
Acute Health Microbiological	48	48	100.0%	Excellent
Chronic Health	213	213	100.0%	Excellent
Aesthetic	132	132	100.0%	Excellent
Operational Efficiency	48	48	100.0%	Excellent

Merweville			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	21	21	100.0%	Excellent	P/N	Yes	103.00
Turbidity	NTU	Operational	≤ 1	21	21	100.0%	Excellent	P/R	Yes	0.30
		Aesthetic	≤ 5	21	21	100.0%	Excellent	P/R	Yes	
pH (at 25°C)		Operational	≥5.0 - ≤ 9.7	21	21	100.0%	Excellent	P	Yes	7.36
Heterotrophic Plate Count	cfu/ml	Operational	≤ 1000	0	0			P		
E.Coli (<1 taken as 0)	cfu/100ml	Acute Health Micro	≤ 0	24	24	100.0%	Excellent	P	Yes	0.00
Total Coliform Count (<1 taken as 0)	cfu/100ml	Operational	≤ 10	24	18	75.0%	Unacceptable	N	No	8.08
Total Chlorine	mg/L	Chronic Health	≤ 5	1	1	100.0%	Excellent	N		1.05
Colour	mg/L	Aesthetic	≤ 15	1	1	100.0%	Excellent		Yes	10.00
Alkalinity (as CaCO ₃)	mg/L		-	0						
Total Hardness (as CaCO ₃)	mg/L		-	0						
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	0	0					
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	0	0					
Sodium (as Na)	mg/L	Aesthetic	≤ 200	1	1	100.0%	Excellent	N	Yes	79.60
Potassium (as K)	mg/L	Operational / Health	≤ 50	0	0					
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	1	1	100.0%	Excellent	N	Yes	0.05
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	79.00
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	1	1	100.0%	Excellent	R	Yes	0.73
Sulphate (as SO ₄ ²⁻)	mg/L	Acute Health Chemical	≤ 500	7	7	100.0%	Excellent	N	Yes	82.91
		Aesthetic	≤ 250	7	7	100.0%	Excellent	N	Yes	
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	1	1	100.0%	Excellent	N	Yes	533.00
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	4.50
Iron (as Fe)	ug/L	Chronic Health	≤ 2000	21	21	100.0%	Excellent	N	Yes	27.86
		Aesthetic	≤ 300	21	21	100.0%	Excellent	R	Yes	
Manganese (as Mn)	ug/L	Chronic Health	≤ 400	21	21	100.0%	Excellent	N	Yes	20.00
		Aesthetic	< 100	21	21	100.0%	Excellent	R	Yes	
Aluminium (as Al)	ug/L	Operational	≤300	21	21	100.0%	Excellent		Yes	27.72
Cytopathogenic Viruses	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Cryptosporidium Species	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Giardia Species	cfu/10 l	Acute Health Micro	≤ 0	0	0					
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	20.00
Dibromochloromethane	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	20.00
Bromoform	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	20.00
Somatic Coliphages	cfu/10ml	Operational	≤ 0	0	0					
Total THM ratio	Calc	Chronic Health	≤ 1	1	1	100.0%	Excellent	N	Yes	0.40
Phenols	ug/L	Aesthetic	≤10	1	1	100.0%	Excellent	N	Yes	10.00
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	4.50
Nitrite as N	mg/L	Acute Health Chemical	≤ 0.9	1	1	100.0%	Excellent	N	Yes	0.05
Antimony (as Sb)	ug/L	Chronic Health	≤ 20	1	1	100.0%	Excellent	N	Yes	5.00
Arsenic (as As)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	5.00
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	5.00
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	20.00
Lead (as Pb)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	3.00
Mercury (as Hg)	ug/L	Chronic Health	≤ 6	1	1	100.0%	Excellent	N	Yes	1.00
Nickel (as Ni)	ug/L	Chronic Health	≤ 70	1	1	100.0%	Excellent	N	Yes	5.00
Selenium (as Se)	ug/L	Chronic Health	≤ 40	1	1	100.0%	Excellent	N	Yes	20.00
Vanadium (as V)	ug/L	Chronic Health	≤ 200	0	0					
Cyanide	ug/L	Acute Health Chemical	≤ 200	1	1	100.0%	Excellent	N	Yes	10.00
Total Organic Carbon	mg/L	Chronic Health	≤ 10	0	0					
Uranium (as U)	ug/L	Chronic Health	≤ 30	1	1	100.0%	Excellent	N	Yes	5.00
Barium (as Ba)	ug/L	Chronic Health	≤ 700	1	1	100.0%	Excellent	N	Yes	75.40
Boron (as B)	mg/L	Chronic Health	≤ 2.4	1	1	100.0%	Excellent	N	Yes	0.18
CaCO ₃ Precipitation Potential			-	0						
Microcystin (as LR)	ug/L	Chronic Health	≤ 1	1	1	100.0%	Excellent		Yes	1.00
Monochloramine	mg/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	0.09

Acute Health Chemical	11	11	100.0%	Excellent
Acute Health Microbiological	24	24	100.0%	Excellent
Chronic Health	63	63	100.0%	Excellent
Aesthetic	98	98	100.0%	Excellent
Operational Efficiency	87	81	93.1%	Excellent

Nelspoort			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	23	0	0.0%	Unacceptable	P/N	No	300.13
Turbidity	NTU	Operational	≤ 1	23	13	56.5%	Unacceptable	P/R	No	1.45
		Aesthetic	≤ 5	23	22	95.7%	Excellent	P/R	Yes	
pH (at 25°C)		Operational	≥5.0 - ≤ 9.7	23	23	100.0%	Excellent	P	Yes	8.12
Heterotrophic Plate Count	cfu/ml	Operational	≤ 1000	0	0			P		
E.Coli (<1 taken as 0)	cfu/100ml	Acute Health Micro	≤ 0	24	24	100.0%	Excellent	P	Yes	0.00
Total Coliform Count (<1 taken as 0)	cfu/100ml	Operational	≤ 10	24	22	91.7%	Good	N	Yes	1.54
Total Chlorine	mg/L	Chronic Health	≤ 5	1	1	100.0%	Excellent	N		1.73
Colour	mg/L	Aesthetic	≤ 15	1	1	100.0%	Excellent		Yes	10.00
Alkalinity (as CaCO ₃)	mg/L		-	0						
Total Hardness (as CaCO ₃)	mg/L		-	0						
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	0	0					
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	0	0					
Sodium (as Na)	mg/L	Aesthetic	≤ 200	1	0	0.0%	Unacceptable	N	No	349.00
Potassium (as K)	mg/L	Operational / Health	≤ 50	0	0					
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	1	1	100.0%	Excellent	N	Yes	0.05
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	1	0	0.0%	Unacceptable	R	No	448.00
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	1	1	100.0%	Excellent	R	Yes	1.05
Sulphate (as SO ₄ ²⁻)	mg/L	Acute Health Chemical	≤ 500	1	1	100.0%	Excellent	N	Yes	310.00
		Aesthetic	≤ 250	1	0	0.0%	Unacceptable	N	No	
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	1	0	0.0%	Unacceptable	N	No	1859.00
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	0.14
Iron (as Fe)	ug/L	Chronic Health	≤ 2000	23	23	100.0%	Excellent	N	Yes	24.53
		Aesthetic	≤ 300	23	23	100.0%	Excellent	R	Yes	
Manganese (as Mn)	ug/L	Chronic Health	≤ 400	23	23	100.0%	Excellent	N	Yes	20.00
		Aesthetic	< 100	23	23	100.0%	Excellent	R	Yes	
Aluminium (as Al)	ug/L	Operational	≤300	23	23	100.0%	Excellent		Yes	27.05
Cytopathogenic Viruses	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Cryptosporidium Species	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Giardia Species	cfu/10 l	Acute Health Micro	≤ 0	0	0					
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	20.00
Dibromochloromethane	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	39.00
Bromoform	ug/L	Chronic Health	≤ 100	1	0	0.0%	Unacceptable	N	No	317.00
Somatic Coliphages	cfu/10ml	Operational	≤ 0	0	0					
Total THM ratio	Calc	Chronic Health	≤ 1	1	0	0.0%	Unacceptable	N	No	3.70
Phenols	ug/L	Aesthetic	≤10	1	1	100.0%	Excellent	N	Yes	10.00
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	0.14
Nitrite as N	mg/L	Acute Health Chemical	≤ 0.9	1	1	100.0%	Excellent	N	Yes	0.05
Antimony (as Sb)	ug/L	Chronic Health	≤ 20	1	1	100.0%	Excellent	N	Yes	5.00
Arsenic (as As)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	5.00
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	5.00
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	20.00
Lead (as Pb)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	3.00
Mercury (as Hg)	ug/L	Chronic Health	≤ 6	1	1	100.0%	Excellent	N	Yes	1.00
Nickel (as Ni)	ug/L	Chronic Health	≤ 70	1	1	100.0%	Excellent	N	Yes	5.00
Selenium (as Se)	ug/L	Chronic Health	≤ 40	1	1	100.0%	Excellent	N	Yes	20.00
Vanadium (as V)	ug/L	Chronic Health	≤ 200	0	0					
Cyanide	ug/L	Acute Health Chemical	≤ 200	1	1	100.0%	Excellent	N	Yes	10.00
Total Organic Carbon	mg/L	Chronic Health	≤ 10	0	0					
Uranium (as U)	ug/L	Chronic Health	≤ 30	1	1	100.0%	Excellent	N	Yes	5.00
Barium (as Ba)	ug/L	Chronic Health	≤ 700	1	1	100.0%	Excellent	N	Yes	95.20
Boron (as B)	mg/L	Chronic Health	≤ 2.4	1	1	100.0%	Excellent	N	Yes	0.57
CaCO ₃ Precipitation Potential			-	0						
Microcystin (as LR)	ug/L	Chronic Health	≤ 1	1	1	100.0%	Excellent		Yes	1.00
Monochloramine	mg/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	0.09

Acute Health Chemical	5	5	100.0%	Excellent
Acute Health Microbiological	24	24	100.0%	Excellent
Chronic Health	67	65	97.0%	Excellent
Aesthetic	100	72	72.0%	Unacceptable
Operational Efficiency	93	81	87.1%	Unacceptable

Murraysburg			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	21	2	9.5%	Unacceptable	P/N	No	206.76
Turbidity	NTU	Operational	≤ 1	21	21	100.0%	Excellent	P/R	Yes	0.33
		Aesthetic	≤ 5	21	21	100.0%	Excellent	P/R	Yes	
pH (at 25°C)		Operational	≥5.0 - ≤ 9.7	21	21	100.0%	Excellent	P	Yes	7.56
Heterotrophic Plate Count	cfu/ml	Operational	≤ 1000	0	0			P		
E.Coli (<1 taken as 0)	cfu/100ml	Acute Health Micro	≤ 0	22	18	81.8%	Unacceptable	P	No	1.41
Total Coliform Count (<1 taken as 0)	cfu/100ml	Operational	≤ 10	22	16	72.7%	Unacceptable	N	No	23.18
Total Chlorine	mg/L	Chronic Health	≤ 5	1	1	100.0%	Excellent	N	Yes	0.10
Colour	mg/L	Aesthetic	≤ 15	1	1	100.0%	Excellent		Yes	10.00
Alkalinity (as CaCO ₃)	mg/L		-	0						
Total Hardness (as CaCO ₃)	mg/L		-	0						
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	0	0					
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	0	0					
Sodium (as Na)	mg/L	Aesthetic	≤ 200	1	1	100.0%	Excellent	N	Yes	192.00
Potassium (as K)	mg/L	Operational / Health	≤ 50	0	0					
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	1	1	100.0%	Excellent	N	Yes	0.05
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	1	1	100.0%	Excellent	R	Yes	268.00
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	1	1	100.0%	Excellent	R	Yes	0.81
Sulphate (as SO ₄ ²⁻)	mg/L	Acute Health Chemical	≤ 500	1	1	100.0%	Excellent	N	Yes	241.00
		Aesthetic	≤ 250	1	1	100.0%	Excellent	N	Yes	
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	1	0	0.0%	Unacceptable	N	No	1388.00
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	0	0.0%	Unacceptable	R	No	14.30
Iron (as Fe)	ug/L	Chronic Health	≤ 2000	19	19	100.0%	Excellent	N	Yes	23.72
		Aesthetic	≤ 300	19	19	100.0%	Excellent	R	Yes	
Manganese (as Mn)	ug/L	Chronic Health	≤ 400	19	19	100.0%	Excellent	N	Yes	20.00
		Aesthetic	< 100	19	19	100.0%	Excellent	R	Yes	
Aluminium (as Al)	ug/L	Operational	≤300	19	19	100.0%	Excellent		Yes	36.70
Cytopathogenic Viruses	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Cryptosporidium Species	cfu/10 l	Acute Health Micro	≤ 0	0	0					
Giardia Species	cfu/10 l	Acute Health Micro	≤ 0	0	0					
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	20.00
Dibromochloromethane	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	20.00
Bromoform	ug/L	Chronic Health	≤ 100	1	1	100.0%	Excellent	N	Yes	90.00
Somatic Coliphages	cfu/10ml	Operational	≤ 0	0	0					
Total THM ratio	Calc	Chronic Health	≤ 1	1	1	100.0%	Excellent	N	Yes	0.90
Phenols	ug/L	Aesthetic	≤10	1	1	100.0%	Excellent	N	Yes	10.00
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	0	0.0%	Unacceptable	R	No	14.30
Nitrite as N	mg/L	Acute Health Chemical	≤ 0.9	1	1	100.0%	Excellent	N	Yes	0.05
Antimony (as Sb)	ug/L	Chronic Health	≤ 20	1	1	100.0%	Excellent	N	Yes	5.00
Arsenic (as As)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	5.00
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	5.00
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	20.00
Lead (as Pb)	ug/L	Chronic Health	≤ 10	1	1	100.0%	Excellent	N	Yes	3.00
Mercury (as Hg)	ug/L	Chronic Health	≤ 6	1	1	100.0%	Excellent	N	Yes	1.00
Nickel (as Ni)	ug/L	Chronic Health	≤ 70	1	1	100.0%	Excellent	N	Yes	5.00
Selenium (as Se)	ug/L	Chronic Health	≤ 40	1	1	100.0%	Excellent	N	Yes	20.00
Vanadium (as V)	ug/L	Chronic Health	≤ 200	0	0					
Cyanide	ug/L	Acute Health Chemical	≤ 200	1	1	100.0%	Excellent	N	Yes	10.00
Total Organic Carbon	mg/L	Chronic Health	≤ 10	0	0					
Uranium (as U)	ug/L	Chronic Health	≤ 30	1	1	100.0%	Excellent	N	Yes	5.00
Barium (as Ba)	ug/L	Chronic Health	≤ 700	1	1	100.0%	Excellent	N	Yes	104.00
Boron (as B)	mg/L	Chronic Health	≤ 2.4	1	1	100.0%	Excellent	N	Yes	0.29
CaCO ₃ Precipitation Potential			-	0						
Microcystin (as LR)	ug/L	Chronic Health	≤ 1	1	1	100.0%	Excellent		Yes	1.00
Monochloramine	mg/L	Chronic Health	≤ 3	1	1	100.0%	Excellent	N	Yes	0.09

Acute Health Chemical	5	3	60.0%	Unacceptable
Acute Health Microbiological	22	18	81.8%	Unacceptable
Chronic Health	59	59	100.0%	Excellent
Aesthetic	88	68	77.3%	Unacceptable
Operational Efficiency	83	77	92.8%	Good