

Withoogte Final			2014 Blue Drop Limits	Compliance Calculations 2012/2013				
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)	Average
pH (at 25°C)	pH	Operational	≥5.0 - ≤ 9.7	23	23	100.0%	Excellent	9.03
Conductivity	mS/m	Aesthetic	≤ 170	23	23	100.0%	Excellent	35.30
Turbidity	NTU	Operational	≤ 1	23	22	95.7%	Excellent	0.62
		Aesthetic	≤ 5	23	23	100.0%	Excellent	0.62
Free chlorine	mg/L	Chronic Health	≤ 5	22	22	100.0%	Excellent	0.45
Colour (as Pt)	mg/L Pt-Co	Aesthetic	< 20	3	3	100.0%	Excellent	7.33
Total Alkalinity (as CaCO <sub>3</sub> )			-					48.00
Total Hardness (as CaCO <sub>3</sub> )			-					35.00
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	1	1	100.0%	Excellent	14.00
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	1	1	100.0%	Excellent	4.10
Sodium (as Na)	mg/L	Aesthetic	≤ 200	1	1	100.0%	Excellent	20.00
Potassium (as K)	mg/L	Operational / Health	≤ 50	1	1	100.0%	Excellent	0.90
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	3	3	100.0%	Excellent	0.03
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	4	4	100.0%	Excellent	64.38
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	2	2	100.0%	Excellent	0.10
Sulphate (as SO <sub>4</sub> )	mg/L	Acute Health - 1	≤ 500	2	2	100.0%	Excellent	16.50
		Aesthetic	≤ 250	2	2	100.0%	Excellent	16.50
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	2	2	100.0%	Excellent	195.50
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	1	1	100.0%	Excellent	0.05
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health - 1	< 10	1	1	100.0%	Excellent	0.10
Iron (as Fe)	ug/L	Chronic Health	≤ 2 000	2	2	100.0%	Excellent	55.00
		Aesthetic	≤ 300	2	2	100.0%	Excellent	55.00
Manganese (as Mn)	ug/L	Chronic Health	≤ 500	2	2	100.0%	Excellent	25.00
		Aesthetic	< 100	2	2	100.0%	Excellent	25.00
Aluminium (as Al)	ug/L	Operational	≤ 300	2	2	100.0%	Excellent	32.00
Total Coliform Count	cfu/100ml	Operational	≤ 10	23	23	100.0%	Excellent	0.00
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	23	23	100.0%	Excellent	0.00
Chloroform	mg/L	Chronic Health	≤ 0.3	2	2	100.0%	Excellent	0.08
Bromodichloromethane	mg/L	Chronic Health	≤ 0.06	2	2	100.0%	Excellent	0.03
Dibromochloromethane	mg/L	Chronic Health	≤ 0.1	2	2	100.0%	Excellent	0.01
Bromoform	mg/L	Chronic Health	≤ 0.1	2	2	100.0%	Excellent	0.00
Phenols	ug/L	Aesthetic	≤ 10	2	2	100.0%	Excellent	0.01

Acute Health - 1 Chemical	3	3	100.0%	Excellent
Acute Health - 1 Microbiological	23	23	100.0%	Excellent
Chronic Health	36	36	100.0%	Excellent
Aesthetic	70	70	100.0%	Excellent
Risk Assessment Defined Health (Acute or Chronic)	64	64	100.0%	Excellent
Operational Efficiency	73	72	98.6%	Excellent

Moorreesburg			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
Total Coliform Count	cfu/100ml	Operational	≤ 10	16	16	100.0%	Excellent	0.44
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	16	15	93.8%	Unacceptable	0.13

Acute Health - 1 Chemical	0	0	-	-
Acute Health - 1 Microbiological	16	15	93.8%	Unacceptable
Chronic Health	0	0	-	-
Aesthetic	0	0	-	-
Risk Assessment Defined Health (Acute or Chronic)	16	15	93.8%	Good
Operational Efficiency	16	16	100.0%	Excellent

Koringberg			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
pH (at 25°C)	pH	Operational	$\geq 5.0 - \leq 9.7$	24	22	91.7%	Good	9.19
Conductivity	mS/m	Aesthetic	$\leq 170$	24	24	100.0%	Excellent	35.54
Turbidity	NTU	Operational	$\leq 1$	24	20	83.3%	Unacceptable	0.79
		Aesthetic	$\leq 5$	24	24	100.0%	Excellent	0.79
Free chlorine	mg/L	Chronic Health	$\leq 5$	23	22	95.7%	Excellent	1.02
Total Coliform Count	cfu/100ml	Operational	$\leq 10$	24	22	91.7%	Good	1.94
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	$\leq 0$	24	24	100.0%	Excellent	0.00

Acute Health - 1 Chemical	0	0	-	-
Acute Health - 1 Microbiological	24	24	100.0%	Excellent
Chronic Health	23	22	95.7%	Excellent
Aesthetic	48	48	100.0%	Excellent
Risk Assessment Defined Health (Acute or Chronic)	47	46	97.9%	Excellent
Operational Efficiency	72	64	88.9%	Unacceptable

Swartland Final			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population > 100 000)	Average
pH (at 25°C)	pH	Operational	≥5.0 - ≤ 9.7	24	22	91.7%	Good	8.82
Conductivity	mS/m	Aesthetic	≤ 170	24	24	100.0%	Excellent	14.58
Turbidity	NTU	Operational	≤ 1	24	21	87.5%	Unacceptable	0.70
		Aesthetic	≤ 5	24	24	100.0%	Excellent	#DIV/0!
Free chlorine	mg/L	Chronic Health	≤ 5	23	23	100.0%	Excellent	0.42
Colour (as Pt)	mg/L Pt-Co	Aesthetic	< 20	2	2	100.0%	Excellent	10.50
Total Alkalinity (as CaCO <sub>3</sub> )			-					19.00
Total Hardness (as CaCO <sub>3</sub> )			-					25.33
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	1	1	100.0%	Excellent	13.00
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	1	1	100.0%	Excellent	2.20
Sodium (as Na)	mg/L	Aesthetic	≤ 200	1	1	100.0%	Excellent	13.00
Potassium (as K)	mg/L	Operational / Health	≤ 50	1	1	100.0%	Excellent	0.10
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	2	2	100.0%	Excellent	0.03
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	3	3	100.0%	Excellent	21.70
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	2	2	100.0%	Excellent	0.10
Sulphate (as SO <sub>4</sub> )	mg/L	Acute Health - 1	≤ 500	2	2	100.0%	Excellent	17.50
		Aesthetic	≤ 250	2	2	100.0%	Excellent	#DIV/0!
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	2	2	100.0%	Excellent	101.00
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	1	1	100.0%	Excellent	0.05
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health - 1	< 10	1	1	100.0%	Excellent	0.10
Iron (as Fe)	ug/L	Chronic Health	≤ 2 000	2	2	100.0%	Excellent	45.00
		Aesthetic	≤ 300	2	2	100.0%	Excellent	#DIV/0!
Manganese (as Mn)	ug/L	Chronic Health	≤ 500	2	2	100.0%	Excellent	25.00
		Aesthetic	< 100	2	2	100.0%	Excellent	#DIV/0!
Aluminium (as Al)	ug/L	Operational	≤ 300	2	2	100.0%	Excellent	30.00
Total Coliform Count	cfu/100ml	Operational	≤ 10	24	23	95.8%	Excellent	0.93
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	24	24	100.0%	Excellent	0.00
Chloroform	mg/L	Chronic Health	≤ 0.3	2	2	100.0%	Excellent	0.02
Bromodichloromethane	mg/L	Chronic Health	≤ 0.06	2	2	100.0%	Excellent	0.04
Dibromochloromethane	mg/L	Chronic Health	≤ 0.1	2	2	100.0%	Excellent	0.01
Bromoform	mg/L	Chronic Health	≤ 0.1	2	2	100.0%	Excellent	0.00
Phenols	ug/L	Aesthetic	≤ 10	2	2	100.0%	Excellent	0.01

Acute Health - 1 Chemical	3	3	100.0%	Excellent
Acute Health - 1 Microbiological	24	24	100.0%	Excellent
Chronic Health	37	37	100.0%	Excellent
Aesthetic	69	69	100.0%	Excellent
Risk Assessment Defined Health (Acute or Chronic)	66	66	100.0%	Excellent
Operational Efficiency	76	70	92.1%	Good

Malmesbury			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
pH (at 25°C)	pH	Operational	$\geq 5.0 - \leq 9.7$	24	23	95.8%	Excellent	<b>8.87</b>
Conductivity	mS/m	Aesthetic	$\leq 170$	24	24	100.0%	Excellent	<b>16.88</b>
Turbidity	NTU	Operational	$\leq 1$	24	21	87.5%	<b>Unacceptable</b>	<b>0.73</b>
		Aesthetic	$\leq 5$	24	24	100.0%	Excellent	<b>0.73</b>
Free chlorine	mg/L	Chronic Health	$\leq 5$	24	24	100.0%	Excellent	<b>0.18</b>
Total Coliform Count	cfu/100ml	Operational	$\leq 10$	36	36	100.0%	Excellent	<b>0.00</b>
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	$\leq 0$	36	36	100.0%	Excellent	<b>0.00</b>

Acute Health - 1 Chemical							
Acute Health - 1 Microbiological	36	36	100.0%	Excellent			
Chronic Health	24	24	100.0%	Excellent			
Aesthetic	48	48	100.0%	Excellent			
Risk Assessment Defined Health (Acute or Chronic)	60	60	100.0%	Excellent			
Operational Efficiency	84	80	95.2%	Excellent			

Darling			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
pH (at 25°C)	pH	Operational	≥5.0 - ≤ 9.7	24	21	87.5%	Unacceptable	9.36
Conductivity	mS/m	Aesthetic	≤ 170	24	24	100.0%	Excellent	15.75
Turbidity	NTU	Operational	≤ 1	24	15	62.5%	Unacceptable	1.00
		Aesthetic	≤ 5	24	24	100.0%	Excellent	1.00
Free chlorine	mg/L	Chronic Health	≤ 5	24	24	100.0%	Excellent	0.01
Total Coliform Count	cfu/100ml	Operational	≤ 10	35	35	100.0%	Excellent	0.20
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	35	34	97.1%	Excellent	0.03

Acute Health - 1 Chemical							
Acute Health - 1 Microbiological	35	34	97.1%	Excellent			
Chronic Health	24	24	100.0%	Excellent			
Aesthetic	48	48	100.0%	Excellent			
Risk Assessment Defined Health (Acute or Chronic)	59	58	98.3%	Excellent			
Operational Efficiency	83	71	85.5%	Unacceptable			

Riebeek Kasteel			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
Total Coliform Count	cfu/100ml	Operational	≤ 10	8	7	87.5%	Unacceptable	3.25
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	8	8	100.0%	Excellent	0.00

Acute Health - 1 Chemical	0	0	-	-
Acute Health - 1 Microbiological	8	8	100.0%	Excellent
Chronic Health	0	0	-	-
Aesthetic	0	0	-	-
Risk Assessment Defined Health (Acute or Chronic)	8	8	100.0%	Excellent
Operational Efficiency	8	7	87.5%	Unacceptable

Riebeek Wes			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
Total Coliform Count	cfu/100ml	Operational	≤ 10	4	4	100.0%	Excellent	0.00
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	4	4	100.0%	Excellent	0.00

Acute Health - 1 Chemical	0	0	-	-
Acute Health - 1 Microbiological	4	4	100.0%	Excellent
Chronic Health	0	0	-	-
Aesthetic	0	0	-	-
Risk Assessment Defined Health (Acute or Chronic)	4	4	100.0%	Excellent
Operational Efficiency	4	4	100.0%	Excellent



Yzerfontein			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
pH (at 25°C)	pH	Operational	$\geq 5.0 - \leq 9.7$	24	7	29.2%	Unacceptable	9.84
Conductivity	mS/m	Aesthetic	$\leq 170$	24	24	100.0%	Excellent	20.50
Turbidity	NTU	Operational	$\leq 1$	24	19	79.2%	Unacceptable	1.04
		Aesthetic	$\leq 5$	24	24	100.0%	Excellent	1.04
Free chlorine	mg/L	Chronic Health	$\leq 5$	24	24	100.0%	Excellent	0.01
Total Coliform Count	cfu/100ml	Operational	$\leq 10$	24	24	100.0%	Excellent	0.08
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	$\leq 0$	24	24	100.0%	Excellent	0.00

Acute Health - 1 Chemical	0	0	-	-
Acute Health - 1 Microbiological	24	24	100.0%	Excellent
Chronic Health	24	24	100.0%	Excellent
Aesthetic	48	48	100.0%	Excellent
Risk Assessment Defined Health (Acute or Chronic)	48	48	100.0%	Excellent
Operational Efficiency	72	50	69.4%	Unacceptable

Riverlands			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
Total Coliform Count	cfu/100ml	Operational	≤ 10	4	3	75.0%	Unacceptable	4.50
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	4	4	100.0%	Excellent	0.00

Acute Health - 1 Chemical	0	0	-	-
Acute Health - 1 Microbiological	4	4	100.0%	Excellent
Chronic Health	0	0	-	-
Aesthetic	0	0	-	-
Risk Assessment Defined Health (Acute or Chronic)	4	4	100.0%	Excellent
Operational Efficiency	4	3	75.0%	Unacceptable

Abbotsdale			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
Total Coliform Count	cfu/100ml	Operational	≤ 10	5	4	80.0%	Unacceptable	7.80
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	5	4	80.0%	Unacceptable	1.00

Acute Health - 1 Chemical	0	0	-	-
Acute Health - 1 Microbiological	5	4	80.0%	Unacceptable
Chronic Health	0	0	-	-
Aesthetic	0	0	-	-
Risk Assessment Defined Health (Acute or Chronic)	5	4	80.0%	Unacceptable
Operational Efficiency	5	4	80.0%	Unacceptable

Chatsworth			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
Total Coliform Count	cfu/100ml	Operational	≤ 10	4	3	75.0%	Unacceptable	59.00
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	4	3	75.0%	Unacceptable	1.00

Acute Health - 1 Chemical	0	0	-	-
Acute Health - 1 Microbiological	4	3	75.0%	Unacceptable
Chronic Health	0	0	-	-
Aesthetic	0	0	-	-
Risk Assessment Defined Health (Acute or Chronic)	4	3	75.0%	Unacceptable
Operational Efficiency	4	3	75.0%	Unacceptable