

**In-stream Water Quality Guidelines for the Grootdraai Dam Catchment
Leuspruit (ND-LEEU, S-TUTU, S-ND-SOUTH)**

Variables	Measured as	Ideal	Acceptable	Tolerable	Unacceptable
		Catchment Background	Management Target	Interim Target	
Physical					
Conductivity	mS/m	< 15	15 - 30	30 - 50	> 50
Alkalinity	CaCO ₃ mg/l	< 40	40 - 70	70 - 100	> 100
pH	pH units	6.4 - 8.5			< 6.4; > 8.5
Organic					
Chemical Oxygen Demand (COD)	mg/l	< 10	10 - 20	20 - 35	> 35
Macro Elements					
Ammonia (NH ₄)	mg/l	< 0.02	0.02 - 0.5	0.5 - 1	> 1
Chloride (Cl)	mg/l	< 10	10 - 20	20 - 30	> 30
Fluoride (F)	mg/l	<0.05	0.05 - 0.20	0.2 - 0.4	>0.4
Nitrate (NO ₃)	mg/l	< 0.05	0.05 - 0.25	0.25 - 0.50	> 0.50
Phosphate (PO ₄)	mg/l	< 0.05	0.05 - 0.25	0.25 - 0.50	> 0.50
Sulphate (SO ₄)	mg/l	< 15	15 - 35	35 - 50	> 50
Bacteriological					
<i>Faecal coliforms</i>	counts/100ml	<10	10 - 60	60 - 120	>120

**In-stream Water Quality Guidelines for the Grootdraai Dam Catchment
Brummerspruit (VK, VKR, VKK)**

Variables	Measured as	Ideal	Acceptable	Tolerable	Unacceptable
		Catchment Background	Management Target	Interim Target	
Physical					
Conductivity	mS/m	< 15	15 - 30	30 - 50	> 50
Alkalinity	CaCO ₃ mg/l	< 40	40 - 80	80 - 120	> 120
pH	pH units	6.4 - 8.5			< 6.4; > 8.5
Organic					
Chemical Oxygen Demand (COD)	mg/l	< 10	10 - 20	20 - 35	> 35
Macro Elements					
Ammonia (NH ₄)	mg/l	< 0.02	0.02 - 0.5	0.5 - 1	> 1
Chloride (Cl)	mg/l	< 25	25 - 50	50 - 70	>70
Fluoride (F)	mg/l	<0.05	0.05 - 0.20	0.2 - 0.4	>0.4
Nitrate (NO ₃)	mg/l	< 0.05	0.05 - 0.25	0.25 - 0.50	> 0.50
Phosphate (PO ₄)	mg/l	< 0.05	0.05 - 0.25	0.25 - 0.50	> 0.50
Sodium (Na)	mg/l				
Sulphate (SO ₄)	mg/l	< 20	20 - 50	50 - 70	> 70
Bacteriological					
<i>Faecal coliforms</i>	counts/100ml	<10	10 - 60	60 - 120	>120

**In-stream Water Quality Guidelines for the Grootdraai Dam Catchment
Schulpspruit (VKV, VRA, ZD)**

Variables	Measured as	Ideal	Acceptable	Tolerable	Unacceptable
		Catchment Background	Management Target	Interim Target	
Physical					
Conductivity	mS/m	< 10	10 - 15	15 - 25	> 25
Alkalinity	CaCO ₃ mg/l	< 20	20 - 45	45 - 75	> 75
pH	pH units	6.4 - 8.5			< 6.4; > 8.5
Organic					
Chemical Oxygen Demand (COD)	mg/l	< 10	10 - 15	15 - 25	> 25
Macro Elements					
Ammonia (NH ₄)	mg/l	< 0.02	0.02 - 0.5	0.5 - 1	> 1

Chloride (Cl)	mg/l	< 10	10 - 15	15 - 20	> 20
Fluoride (F)	mg/l	<0.05	0.05 - 0.20	0.2 - 0.4	>0.4
Nitrate (NO ₃)	mg/l	< 0.05	0.05 - 0.25	0.25 - 0.50	> 0.50
Phosphate (PO ₄)	mg/l	< 0.05	0.05 - 0.25	0.25 - 0.50	> 0.50
Sulphate (SO ₄)	mg/l	< 10	10 - 20	20 - 30	> 30

Bacteriological

<i>Faecal coliforms</i>	counts/100ml	<10	10 - 60	60 - 120	>120
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In-stream Water Quality Guidelines for the Grootdraai Dam Catchment

Blesbokspruit (VBS, VBB, S-BETHAL)

Variables	Measured as	Ideal	Acceptable	Tolerable	Unacceptable
		Catchment Background	Management Target	Interim Target	
Physical					
Conductivity	mS/m	< 15	15 - 30	30 - 50	> 50
Alkalinity	CaCO ₃ mg/l	< 40	40 - 80	80 - 120	> 120
pH	pH units	6.4 - 8.5			< 6.4; > 8.5

Organic

Chemical Oxygen Demand (COD)	mg/l	< 10	10 - 20	20 - 35	> 35
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Macro Elements

Ammonia (NH ₄)	mg/l	< 0.02	0.02 - 0.5	0.5 - 1	> 1
Chloride (Cl)	mg/l	< 25	25 - 50	50 - 70	>70
Fluoride (F)	mg/l	<0.05	0.05 - 0.20	0.2 - 0.4	>0.4
Nitrate (NO ₃)	mg/l	< 0.05	0.05 - 0.25	0.25 - 0.50	> 0.50
Phosphate (PO ₄)	mg/l	< 0.05	0.05 - 0.25	0.25 - 0.50	> 0.50
Sulphate (SO ₄)	mg/l	< 15	15 - 35	35 - 50	> 50

Bacteriological

<i>Faecal coliforms</i>	counts/100ml	<10	10 - 60	60 - 120	>120
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In-stream Water Quality Guidelines for the Grootdraai Dam Catchment

Vaal Origin (VE, S-ESW)

Variables	Measured as	Ideal	Acceptable	Tolerable	Unacceptable
		Catchment Background	Management Target	Interim Target	
Physical					
Conductivity	mS/m	< 10	10 - 15	15 - 25	> 25
Alkalinity	CaCO ₃ mg/l	< 20	20 - 45	45 - 75	> 75
pH	pH units	6.4 - 8.5			< 6.4; > 8.5

Organic

Chemical Oxygen Demand (COD)	mg/l	< 10	10 - 20	20 - 35	> 35
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Macro Elements

Ammonia (NH ₄)	mg/l	< 0.02	0.02 - 0.5	0.5 - 1	> 1
Chloride (Cl)	mg/l	< 10	10 - 15	15 - 20	>20
Fluoride (F)	mg/l	<0.05	0.05 - 0.20	0.2 - 0.4	>0.4
Nitrate (NO ₃)	mg/l	< 0.05	0.05 - 0.25	0.25 - 0.50	> 0.50
Phosphate (PO ₄)	mg/l	< 0.05	0.05 - 0.08	0.08 - 1	>1
Sodium (Na)	mg/l				
Sulphate (SO ₄)	mg/l	< 10	10 - 20	20 - 30	> 30

Bacteriological

<i>Faecal coliforms</i>	counts/100ml	<10	10 - 60	60 - 120	>120
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In-stream Water Quality Guidelines for the Grootdraai Dam Catchment

Majuba (VB, VAS, VGK, S-MAJUBA)

Ideal	Acceptable	Tolerable	Unacceptable
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Variables	Measured as	Catchment Background	Management Target	Interim Target	Unacceptable
Physical					
Conductivity	mS/m	< 15	15 - 30	30 - 50	> 50
Alkalinity	CaCO ₃ mg/l	< 40	40 - 70	70 - 100	> 100
pH	pH units	6.4 - 8.5			< 6.4; > 8.5
Organic					
Chemical Oxygen Demand (COD)	mg/l	< 10	10 - 20	20 - 35	> 35
Macro Elements					
Ammonia (NH ₄)	mg/l	< 0.02	0.02 - 0.5	0.5 - 1	> 1
Chloride (Cl)	mg/l	< 10	10 - 20	20 - 30	> 30
Fluoride (F)	mg/l	< 0.05	0.05 - 0.20	0.2 - 0.4	> 0.4
Nitrate (NO ₃)	mg/l	< 0.05	0.05 - 0.25	0.25 - 0.50	> 0.50
Phosphate (PO ₄)	mg/l	< 0.05	0.05 - 0.25	0.25 - 0.50	> 0.50
Sulphate (SO ₄)	mg/l	< 15	15 - 35	35 - 50	> 50
Bacteriological					
<i>Faecal coliforms</i>	counts/100ml	< 10	10 - 60	60 - 120	> 120