

PLEASE NOTE

Due to the Covid-19 pandemic, Rand Water undertook reduced sampling of sites during this time.

In this regard, some water quality data in the following report is not available for this quarter (Apr-Jun 2020).

Following the lifting of lockdown restrictions, the reinstating of normal sampling procedures will take place.



RAND WATER

Quarterly Water Quality Status of the Grootdraai Dam Catchment

01 July - 30 June 2020

Sample Points	Sample Point Description	Quarter	Ammonia	Chemical Oxygen Demand	Chloride	Conductivity	Fluoride	M-Alkalinity	Nitrate	pH	Phosphate	Sulphate
VB	Blesbokspruit @ Vaal River Confluence 26° 46.558'S 29° 32.485'E	1	0.05	29	57	72	0.69	242	<0.50	8.1	<0.25	63
		2	0.05	40	54	65	0.81	217	0.53	8.1	<0.25	49
		3	0.07	44	16	39	0.34	141	<0.50	7.8	0.31	36
		4										
ND-LEEUE	Leeuspruit @ New Denmark Colliery 26° 51.277'S 29° 19.524'E	1	0.04	16	24	43	0.60	115	<0.50	7.9	<0.25	67
		2	0.03	19	32	49	0.75	87	<0.50	7.8	0.53	127
		3	0.07	32	12	27	0.28	76	<0.50	7.7	<0.25	40
		4										
VS	Vaal River @ Standerton 26° 56.509'S 29° 15.835'E	1	0.02	24	19	34	0.56	103	<0.50	7.7	<0.25	44
		2	0.04	25	17	33	0.49	102	<0.50	7.7	<0.25	46
		3	0.09	22	12	26	0.34	61	0.78	8.2	<0.25	40
		4										

Key

VS	Vaal River @ Standerton 26° 56.509'S 29° 15.835'E	1	0.02	- 1 Jul to 30 Sept 2019
		2	0.04	- 1 Oct to 31 Dec 2019
		3	0.09	- 1 Jan to 31 Mar 2020
		4		- 1 Apr to 30 Jun 2020

Water Quality Guidelines

	- Ideal
	- Acceptable
	- Tolerable
	- Unacceptable



Sewage Works Compliance (where applicable) to General Standard (GN 1191 Oct 1999)

Sample Points	Sample Point Description	Quarter	Ammonia	Chemical Oxygen Demand	Chloride	Conductivity	Faecal coliforms	Fluoride	M-Alkalinity	Nitrate	pH	Phosphate	Sulphate	
S-BETHAL	Bethal Sewage Works 26° 29.182'S 29° 27.056'E	1	29.00	233	53	80	2 266 533	0.81	278	<0.5	7.3	2.76	47	
		2												
		3	2.27	168	49	80	85 534	0.42	200	0.50	7.8	3.80	68	
		4												
S-ESW	Ermelo Sewage Works 26° 30.679'S 29° 57.863'E	1	30.68	228	52	100	5 009 000	0.96	165	<0.5	7.3	2.28	110	
		2	25.00	99	53	86	71 267	1.04	212	1.23	7.3	1.88	104	
		3	19.34	197	50	82	1 025 533	0.41	225	<0.5	7.2	5.80	98	
		4												
S-TUTU	Tutukani Sewage Works 26° 47.621'S 29° 17.514'E	1	7.18	24	52	58	34	0.68	140	1.40	7.8	0.35	86	
		2												
		3	2.84	37	38	53	39 700	0.27	127	1.45	7.6	0.26	61	
		4												
S-ND-SOUTH	New Denmark Colliery - South Shaft 26° 44.611'S 29° 18.272'E	1	14.87	52	82	69	896 500	0.82	177	<0.5	7.3	2.60	71	
		2												
		3	16.20	68	51	76	1 110 250	0.24	153	<0.5	7.3	2.50	42	
		4												

Key

S-BETHAL	Bethal Sewage Works 26° 29.182'S 29° 27.056'E	1	29.00	- 1 Jul to 30 Sept 2019
		2		- 1 Oct to 31 Dec 2019
		3	2.27	- 1 Jan to 31 Mar 2020
		4		- 1 Apr to 30 Jun 2020

Water Quality Guidelines

	- Acceptable
	- Unacceptable

Sewage Works Compliance to General Standard (GN 1191 Oct 1999)

Variables	Measured as	Acceptable Management Target	Unacceptable
Physical			
Conductivity	mS/m	< 150	>= 150
pH	pH units	5.5 - 9.5	< 5.5; > 9.5
Organic			
Chemical Oxygen Demand (COD)*	mg/l	< 75	>= 75
Macro Elements			
Ammonia (NH ₄)	mg/l	< 3	>= 3
Fluoride (F)	mg/l	< 1	>= 1
Nitrate (NO ₃)	mg/l	< 15	>= 15
Phosphate (PO ₄)	mg/l	< 10	>= 10
Bacteriological			
<i>Faecal coliforms</i>	counts/100ml	< 1,000	>= 1,000

**After removal of algae*

Visit
<http://www.reservoir.co.za/> to
find the water quality status
report and forum dates

In-stream Water Quality Guidelines for the Grootdraai Dam Catchment					
Variables	Measured as	Leeuspruit (ND-LEEU)			
		Ideal Catchment Background	Acceptable Management Target	Tolerable Interim Target	Unacceptable
Physical					
Conductivity	mS/m	< 15	15 - 30	30 - 50	> 50
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
Alkalinity	CaCO ₃ mg/l	< 40	40 - 70	70 - 100	> 100
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					
Faecal coliforms	counts/100ml	<10	10 - 60	60 - 120	>120

In-stream Water Quality Guidelines for the Grootdraai Dam Catchment					
Variables	Measured as	Brummerspruit (VK, VKR, VKK)			
		Ideal Catchment Background	Acceptable Management Target	Tolerable Interim Target	Unacceptable
Physical					
Conductivity	mS/m	< 15	15 - 30	30 - 50	> 50
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
Alkalinity	CaCO ₃ mg/l	< 40	40 - 80	80 - 120	> 120
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	< 20	20 - 50	50 - 70	> 70
Bacteriological					
Faecal coliforms	counts/100ml	<10	10 - 60	60 - 120	>120

In-stream Water Quality Guidelines for the Grootdraai Dam Catchment					
Variables	Measured as	Schulpspruit (VKV, VRA, ZD)			
		Ideal Catchment Background	Acceptable Management Target	Tolerable Interim Target	Unacceptable
Physical					
Conductivity	mS/m	< 10	10 - 15	15 - 25	> 25
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
Alkalinity	CaCO ₃ mg/l	< 20	20 - 45	45 - 75	> 75
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					
Faecal coliforms	counts/100ml	<10	10 - 60	60 - 120	>120

In-stream Water Quality Guidelines for the Grootdraai Dam Catchment					
Variables	Measured as	Blesbokspruit (VB, VBS, VBB)			
		Ideal Catchment Background	Acceptable Management Target	Tolerable Interim Target	Unacceptable
Physical					
Conductivity	mS/m	< 15	15 - 30	30 - 50	> 50
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
Alkalinity	CaCO ₃ mg/l	< 40	40 - 80	80 - 120	> 120
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					
Faecal coliforms	counts/100ml	<10	10 - 60	60 - 120	>120

In-stream Water Quality Guidelines for the Grootdraai Dam Catchment					
Variables	Measured as	Vaal Origin (VE)			
		Ideal Catchment Background	Acceptable Management Target	Tolerable Interim Target	Unacceptable
Physical					
Conductivity	mS/m	< 10	10 - 15	15 - 25	> 25
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 - 15	15 - 20	>20
Alkalinity	CaCO ₃ mg/l	< 20	20 - 45	45 - 75	> 75
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
Sulphate (SO ₄)	mg/l	< 10	10 - 20	20 - 30	> 30
Bacteriological					
Faecal coliforms	counts/100ml	<10	10 - 60	60 - 120	>120

In-stream Water Quality Guidelines for the Grootdraai Dam Catchment					
Variables	Measured as	Majuba (VAS, VGK)			
		Ideal Catchment Background	Acceptable Management Target	Tolerable Interim Target	Unacceptable
Physical					
Conductivity	mS/m	< 15	15 - 30	30 - 50	> 50
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
Alkalinity	CaCO ₃ mg/l	< 40	40 - 70	70 - 100	> 100
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					
Faecal coliforms	counts/100ml	<10	10 - 60	60 - 120	>120