

Rand Water

Quarterly Water Quality Status of the Grootdraai Dam Catchment

01 Apr 2017 - 31 Mar 2018



Sample Points	Sample Point Description	Ammonia	Chemical Oxygen Demand	Chloride	Conductivity	Fluoride	M-Alkalinity	Nitrate	pH	Phosphate	Sulphate
VE	Vaal River @ Ermelo 26° 38.891'S 30° 9.072'E	<0.092	19	14	18	0.15	44	0.10	7.2	0.20	16
		<0.05	12	15	25	0.28	75	1.10	7.4	<0.2	27
		<0.092	26	18	27	0.55	100	0.44	7.2	0.20	14
		<0.05	20	11	23	0.33	82	<0.44	6.8	<0.2	20
WITPUNTSRUIT	Witpuntspruit @ N2 near Camden 26° 35.604'S 30° 5.781'E	0.55	13	15	170	0.57	5	0.48	3.1	0.20	440
		1.06	<10	20	231	1.06	88	<0.1	4.2	<0.2	1810
		0.70	16	25	180	1.00	5	0.44	3.5	0.20	<5.0
		0.08	23	25	71	0.32	33	<0.44	4.8	<0.2	272
VAAL-DS_WITPT	Vaal River Downstream of Witpuntspruit 26° 42.123'S 30° 4.968'E	<0.092	11	18	24	0.29	46	0.10	7.3	0.20	44
		0.05	21	19	39	0.48	91	1.20	7.8	<0.2	76
		<0.092	24	30	54	0.54	140	0.44	7.9	0.20	110
		<0.05	18	11	29	0.39	78	<0.44	7.1	<0.2	53
VKV	Klein Vaal River @ Goedeheop 26° 49.209'S 30° 8.199'E										
		<0.092	32	<10	16	0.19	38	0.92	6.8	0.20	20
		<0.05	13	6	20	<0.19	131	<0.44	7.1	<0.2	7
VRA	Rietspruit below Amersfoort 26° 54.785'S 29° 52.320'E	<0.092	25	22	46	0.26	170	0.34	8.0	0.20	39
		0.05	20	35	62	0.26	220	0.38	8.3	<0.2	56
		<0.092	25	36	49	0.30	160	0.44	7.5	0.20	42
		0.10	21	11	37	0.34	140	<0.44	7.6	<0.2	30
VKK	Brummerspruit below Ermelo 26° 30.835'S 29° 54.448'E	8.80	38	35	61	0.28	125	0.10	7.1	0.40	130
		21.67	69	36	74	0.47	212	0.19	7.2	1.69	92
		11.00	45	23	62	0.25	175	0.44	7.0	0.57	54
		18.67	52	35	72	0.54	202	<0.44	7.0	1.90	88
VKR	Tweefontein @ Riverside 26° 37.363'S 29° 50.267'E	1.60	31	26	54	0.27	160	2.00	7.3	0.20	82
		15.83	42	37	77	0.33	248	6.71	7.5	2.40	72
		11.00	53	32	54	0.31	180	0.44	7.3	0.51	72
		6.27	30	25	58	0.32	152	0.99	7.0	0.61	64
VK	Brummerspruit before Vaal River 26° 46.853'S 29° 48.402'E	0.82	26	27	52	0.26	135	3.40	7.5	0.20	97
		1.60	31	32	62	0.42	200	4.80	8.4	0.43	69
		18.00	37	36	44	0.30	140	0.44	7.1	1.30	66
		0.07	21	22	57	0.35	215	1.51	7.4	<0.2	56
VAS	Vaal River above Standerton 26° 51.311'S 29° 41.860'E	<0.092	16	16	36	0.19	110	0.76	7.9	0.20	48
		0.07	15	20	44	0.33	148	0.99	8.6	<0.2	50
		3.30	32	24	96	0.26	54	1.40	5.5	0.24	43
		<0.05	17	11	30	0.30	95	0.36	7.3	<0.2	31
VGK	Geelklipspruit below Amersfoort 26° 57.893'S 29° 40.318'E										
		<0.092	34	110	66	0.32	94	0.44	7.5	0.20	440
		<0.05	28	30	59	0.30	165	<0.44	7.6	<0.2	88
VBB	Blesbokspruit below Bethal 26° 31.866'S 29° 25.371'E	1.80	34	42	58	0.25	175	0.62	7.4	0.55	47
		9.00	52	63	75	0.40	248	0.19	7.7	2.10	54
		11.00	38	58	57	0.27	180	1.40	7.4	2.00	130
		0.91	39	23	37	0.26	105	0.59	7.0	0.91	31
VBS	Blesbokspruit @ Skaapkraal 26° 39.223'S 29° 27.056'E	0.12	35	44	50	0.30	160	0.46	8.5	0.23	50
		<0.05	41	63	71	0.30	240	1.45	9.5	0.69	52
		0.90	35	68	69	0.34	220	0.52	7.6	1.70	53
		<0.05	31	19	31	0.23	89	<0.44	7.6	0.21	26

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VB	Blesbokspruit @ Vaal River Confluence 26° 46.558'S 29° 32.485'E	0.12	26	34	49	0.34	170	0.10	7.8	0.15	54
		<0.05	23	51	68	0.29	240	0.20	8.1	<0.2	70
		0.20	31	62	69	0.39	230	0.44	7.9	0.33	60
		0.10	33	16	36	0.24	107	<0.44	7.6	<0.2	26
ND-LEEUE	Leeuspruit @ New Denmark Colliery 26° 51.277'S 29° 19.524'E	0.12	22	20	34	0.28	86	0.10	7.6	0.15	62
		<0.05	21	21	42	0.32	117	0.32	8.2	<0.2	53
		0.20	29	40	50	0.29	120	0.44	7.5	<0.2	95
		<0.05	22	18	39	0.23	125	<0.44	7.4	<0.2	37
VS	Vaal River @ Standerton 26° 56.509'S 29° 15.835'E	0.15	32	<10	35	0.19	100	0.22	7.5	0.20	26
		0.07	18	11	28	0.31	69	0.25	7.6	<0.2	33
		0.14	21	37	33	0.28	110	0.73	7.2	<0.2	45
		<0.05	20	13	29	0.24	83	<0.44	7.8	<0.2	36

Key

VE	Vaal River @ Ermelo 26° 38.891'S 30° 9.072'E	<0.092	- 1 Apr to 30 Jun 2017
		<0.05	- 1 Jul to 30 Sep 2017
		<0.092	- 1 Oct to 31 Dec 2017
		<0.05	- 1 Jan to 31 Mar 2018

Water Quality Guidelines

	- Ideal
	- Acceptable
	- Tolerable
	- Unacceptable

Rand Water

Quarterly Water Quality Status of the Grootdraai Dam Catchment

01 Apr 2017 - 31 Mar 2018

Wastewater Treatment Works



RAND WATER

Sample Points	Sample Point Description	Ammonia	Chemical Oxygen Demand	Chloride	Conductivity	E.coli	Fluoride	M-Alkalinity	Nitrate	pH	Phosphate	Sulphate
S-BETHAL	Bethal Sewage Works 26° 29.182'S 29° 27.056'E	2.10	36	52	61	1,310	0.22	140	5.10	7.8	0.63	58
		5.05	35	21	59	204,595	25.62	130	3.70	7.2	2.75	53
		6.70	29	50	56	470,800	0.28	135	2.40	7.0	1.20	49
		4.10	24	40	59	340,987	0.30	153	2.75	7.1	1.53	51
S-ESW	Ermelo Sewage Works 26° 30.679'S 29° 57.863'E	25.00	165	25	79	1,334,600	0.18	255	0.28	7.1	3.40	44
		33.00	1025	46	89	4,029,567	0.39	273	0.24	6.7	1.36	93
		20.00	230	49	84	1,973,200	0.24	270	0.44	6.8	2.20	76
		30.67	176	47	91	5,277,333	0.63	285	<0.44	6.9	2.80	96
S-TUTU	Tutukani Sewage Works 26° 47.621'S 29° 17.514'E	0.12	28	58	54	225	0.20	58	16.00	7.2	0.16	64
		0.28	21	65	60	4	0.34	55	13.67	7.0	0.16	68
		0.44	27	54	54	97	0.19	110	3.50	6.9	0.29	74
		6.12	39	48	58	366	0.30	168	2.20	7.7	0.60	48
S-ND-SOUTH	New Denmark Colliery - South Shaft 26° 44.611'S 29° 18.272'E	10.00	39	70	68	5,440	0.42	150	2.00	7.4	2.50	46
		0.12	36	83	73	265	0.25	90	16.00	7.7	1.65	65
		<0.2	46	91	71	69	0.19	107	13.67	7.1	1.57	93
		34.00	35	63	69	380	0.65	151	15.00	7.9	2.31	39

Key

S-BETHAL	Bethal Sewage Works 26° 29.182'S 29° 27.056'E	2.10	- 1 Apr to 30 Jun 2017
		5.05	- 1 Jul to 30 Sep 2017
		6.70	- 1 Oct to 31 Dec 2017
		4.10	- 1 Jan to 31 Mar 2018

Water Quality Guidelines

	- Ideal
	- Acceptable
	- Tolerable
	- Unacceptable

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

Sample Points	Sample Point Description	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	2.10	36	52	61	1,310	0.22	140	5.10	7.8	0.63	58
		5.05	35	21	59	204,595	25.62	130	3.70	7.2	2.75	53
		6.70	29	50	56	470,800	0.28	135	2.40	7.0	1.20	49
		4.10	24	40	59	340,987	0.30	153	2.75	7.1	1.53	51
S-ESW	Ermelo Sewage Works 26° 30.679'S 29° 57.863'E	25.00	165	25	79	1,334,600	0.18	255	0.28	7.1	3.40	44
		33.00	1025	46	89	4,029,567	0.39	273	0.24	6.7	1.36	93
		20.00	230	49	84	1,973,200	0.24	270	0.44	6.8	2.20	76
		30.67	176	47	91	5,277,333	0.63	285	<0.44	6.9	2.80	96
S-TUTU	Tutukani Sewage Works 26° 47.621'S 29° 17.514'E	0.12	28	58	54	225	0.20	58	16.00	7.2	0.16	64
		0.28	21	65	60	4	0.34	55	13.67	7.0	0.16	68
		0.44	27	54	54	97	0.19	110	3.50	6.9	0.29	74
		6.12	39	48	58	366	0.30	168	2.20	7.7	0.60	48
S-ND-SOUTH	New Denmark Colliery - South Shaft 26° 44.611'S 29° 18.272'E	10.00	39	70	68	5,440	0.42	150	2.00	7.4	2.50	46
		0.12	36	83	73	265	0.25	90	16.00	7.7	1.65	65
		<0.2	46	91	71	69	0.19	107	13.67	7.1	1.57	93
		34.00	35	63	69	380	0.65	151	15.00	7.9	2.31	39

Key

S-BETHAL	Bethal Sewage Works 26° 29.182'S 29° 27.056'E	2.10	- 1 Apr to 30 Jun 2017
		5.05	- 1 Jul to 30 Sep 2017
		6.70	- 1 Oct to 31 Dec 2017
		4.10	- 1 Jan to 31 Mar 2018

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*