

Sample Points	Sample Point Description	Quarter	Ammonia	Chemical Oxygen Demand	Chloride	Conductivity	E.coli	Fluoride	M-Alkalinity	Nitrate	pH	Phosphate	Sulphate
VSS	Sandspruit below Vaal River @ Klipplaatsdrift 27° 12.508'S 29° 26.225'E	1											
		2											
		3	0.13	39	16	46		0.47	152	<0.50	8.2	<0.1	48
		4											
KB	Klip River @ Barnardskop 27° 28.203'S 29° 36.032'E	1											
		2	0.03	<10	12	40		<0.20	183	<0.5	8.2	<0.25	17
		3	0.30	14	11	47		0.26	88	<0.50	7.6	<0.1	17
		4											
KW	Klip @ Winkelhaak 27° 14.694'S 29° 23.996'E	1											
		2											
		3	<0.1	33	9	21		<0.20	54	<0.50	7.3	<0.1	21
		4											
KD	Klip River @ De Langesdrift 27° 10.964'S 29° 14.097'E	1	0.03	18	19	39		0.49	102	3.90	7.5	<0.25	46
		2	0.07	17	12	37		<0.20	157	<0.50	8.1	<0.25	19
		3	0.10	21	10	26		0.25	93	<0.50	7.8	0.13	17
		4	0.10	21	10	26		0.38	96	<0.50	7.5	<0.1	22
KSV	Spruitsonderdrift downstream of Vrede 27° 21.137'S 29° 10.281'E	1	0.31	37	63	58		0.70	197	1.14	8.1	0.60	49
		2	0.08	40	84	93		0.41	363	<0.50	8.8	0.52	44
		3	0.14	27	69	35		0.57	133	0.62	7.9	2.90	45
		4	0.20	30	20	38		0.49	163	0.52	8.0	0.17	41
VDS	Vaal River downstream of Standerton 27° 0.933'S 29° 1.488'E	1	2.89	23	15	30		0.38	94	0.84	6.7	1.30	28
		2	0.27	23	24	48		0.23	167	0.61	8.8	<0.25	40
		3	<0.1	24	16	32		0.36	102	<0.50	7.8	0.14	30
		4	0.56	25	15	26		0.50	89	0.51	7.5	0.21	59
VGB	Gladdedrift Bridge @ Villiers 26° 59.521'S 28° 43.786'E	1	0.06	23	13	24		0.35	80	<0.50	7.9	<0.25	29
		2	0.25	22	20	37		0.33	137	<0.50	8.5	1.90	39
		3	0.20	33	25	41		0.37	111	1.27	7.7	0.15	42
		4	0.32	26	13	26		0.38	83	<0.50	7.6	0.17	33
VV	Vaal @ Villiers 27° 1.389'S 28° 35.631'E	1	0.19	29	29	39	473	0.47	111	1.37	8.0	<0.25	46
		2	0.14	30	26	41	8	0.37	126	<0.50	8.1	<0.25	46
		3	0.16	23	21	38	1 191	0.44	105	0.99	7.5	0.29	39
		4	0.14	27	15	27	419	0.42	84	0.56	7.6	0.22	33
VD4I	Vaal Dam 4 Integrated - Vaal River upstream of Vaal Marina 26° 55.366'S 28° 17.219'E	1	0.06	18	16	29	4	0.49	74	0.70	7.8	<0.25	47
		2	0.06	16	21	35	1	0.40	98	<0.50	8.4	<0.25	39
		3	0.13	13	25	38	23	0.41	103	0.65	7.8	0.12	44
		4	0.13	26	12	22	15	0.41	70	<0.50	7.6	0.16	33
WF	Wilge River @ Frankfort 27° 16.311'S 28° 29.489'E	1	0.13	23	3	11	797	0.28	42	0.52	7.6	<0.25	7
		2	0.07	23	6	27	512	<0.20	84	4.20	7.8	2.10	8
		3	0.11	29	7	17	39 874	0.28	52	0.56	7.5	0.16	11
		4	0.10	22	9	19	6 279	0.29	68	0.56	7.6	0.18	13
VD3I	Vaal Dam 3 Integrated - Wilge River downstream of Oranjeville 26° 56.208'S 28° 12.699'E	1	0.03	17	4	16	1	0.27	55	0.64	7.7	<0.25	16
		2	0.07	13	4	12	2	0.24	44	0.56	7.7	<0.25	11
		3	0.21	12	5	12	15	0.23	46	<0.50	7.6	<0.1	10
		4	0.14	24	7	17	7	0.34	56	0.51	7.6	0.19	15
VD2I	Vaal Dam 2 Integrated - Confluence of Vaal & Wilge 26° 54.484'S 28° 11.933'E	1	0.05	16	8	19	13	0.36	61	0.55	7.8	<0.25	24
		2	0.08	12	6	15	5	0.28	51	0.55	7.7	<0.25	16
		3	0.19	12	7	16	6	0.25	53	<0.50	7.7	<0.1	16
		4	0.15	22	9	19	24	0.43	66	0.53	7.7	0.20	41



Quarterly Water Quality Status of the Vaal Dam Reservoir Catchment

01 Apr 2020 - 31 Mar 2021

Sample Points	Sample Point Description	Quarter	Ammonia	Chemical Oxygen Demand	Chloride	Conductivity	E.coli	Fluoride	M-Alkalinity	Nitrate	pH	Phosphate	Sulphate
VD11	Vaal Dam 1 Integrated @ RW Intake	1	0.05	18	9	22	2	0.36	67	0.54	7.9	<0.25	26
		2	0.08	13	12	19	2	0.33	62	0.94	7.9	<0.25	21
		3	0.21	12	7	18	86	0.27	56	<0.50	7.8	<0.1	20
	26° 53.075'S 28° 7.329'E	4	0.11	17	10	20	23	0.38	56	0.55	7.7	0.16	25
KLIPR_VDAM	Klip River inflow to Vaal Dam	1	0.12	40	14	27		0.44	105	0.56	7.8	<0.25	21
		2	0.10	43	19	55		0.56	138	<0.5	8.1	<0.25	51
		3	0.24	43	10	26		0.32	68	<0.50	7.3	0.20	18
	27° 7.735'S 28° 17.028'E	4	0.22	42	12	22		0.34	73	0.51	7.2	0.47	12

Key Water Quality Guidelines

VD11	Vaal Dam 1 Integrated @ RW Intake	1	0.05	- 1 Apr to 30 Jun 2020		- Ideal
		2	0.08	- 1 Jul to 30 Sep 2020		- Acceptable
		3	0.21	- 1 Oct to 31 Dec 2020		- Tolerable
	26° 53.075'S 28° 7.329'E	4	0.11	- 1 Jan to 31 Mar 2021		- 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-ST_NEW	Standerton Sewage Works	1											
		2	24.63	96	69	80	76 070	0.64	218	<0.5	7.8	3.59	68
	3	2.21	96	100	68	114	0.83	106	0.59	7.3	2.98	91	
	26° 58.453'S 28° 12.260'E	4											
S-DENEYSVILLE	Final Effluent of Deneysville WWTW	1											
		2											
	3												
	26° 53.103'S 28° 6.692'E	4											
S-FRANKF_NAMAHA	Final Effluent of Frankfort Namahadi	1	11.54	59	41	60	7 474	0.96	195	2.90	7.6	3.50	40
		2	20.00	67	46	68	109	0.91	175		7.6	3.70	61
	3	7.00	44	45	77	692	0.58	175	8.83	8.5	6.65	52	
	27° 15.691'S 28° 29.503'E	4	9.55	76	61	84	4 075	1.20	230	1.80	7.7	8.50	71
S-FRANKF_OXI_P	Final Effluent of Frankfort Oxidation Ponds	1											
		2											
	3	4.79	141	91	72	11 276	1.21	182	2.58	7.4	8.10	37	
	27° 17.453'S 28° 29.276'E	4	<0.1	125	97	62	20 460	0.79	130	0.55	7.4	3.60	28
S-ORANJEVILLE	Final Effluent of Oranjeville WWTW	1	6.29	50	33	52	2 591 725	0.69	166	3.80	7.4	2.77	25
		2	16.20	51	37	60	966 400	0.77	179	7.20	7.4	4.33	31
	3	24.33	209	38	58	5 871 320	0.62	189	<0.5	7.2	7.08	19	
	26° 58.804'S 28° 12.597'E	4	25.75	115	56	70	11 749 250	0.60	153	<0.5	7.1	7.17	23
S-VAAL_MARINA	Final Effluent of Vaal Marina WWTW	1	7.65	58	57	62	388	0.89	117	12.85	7.6	2.84	52
		2	6.58	49	66	70	325	0.74	141	12.10	7.6	4.36	54
	3	13.75	52	61	69	33 517	1.48	162	5.80	7.2	14.53	56	
	26° 53.324'S 28° 12.838'E	4	24.53	52	62	75	2 899	1.35	252	2.93	7.6	15.28	33
S-VILLIERS	Final Effluent of Villiers WWTW	1	35.25	106	75	93	308	0.44	263	8.26	7.7	14.42	68
		2	11.03	123	93	107	25 086	0.26	257	0.52	7.7	3.55	78
	3	19.73	138	97	101	157 611	0.48	223	<0.5	7.5	9.57	74	
	27° 1.908'S 28° 35.366'E	4	24.83	159	79	85	54 985	0.35	233	<0.5	7.5	12.33	60

Key

S-VAAL_MARINA	Final Effluent of Vaal Marina WWTW	1	7.65	- 1 Apr to 30 Jun 2020
		2	6.58	- 1 Jul to 30 Sep 2020
	3	13.75	- 1 Oct to 31 Dec 2020	
	26° 53.324'S 28° 12.838'E	4	24.53	- 1 Jan to 31 Mar 2021

Water Quality Guidelines

	- Acceptable
	- Unacceptable

In-stream Water Quality for the Vaal Dam Catchment

Variables	Measured as	Ideal Catchment Background	Acceptable Management Target	Tolerable Interim Target	Unacceptable
Physical					
Conductivity	mS/m	< 10	10 - 30	30 - 45	> 45
pH	pH units	6.5 - 8.5			< 6.5; > 8.5
Organic					
Chemical Oxygen Demand (COD)	mg/l	< 10	10 - 15	15 - 20	> 20
Macro Elements					
Ammonia (NH ₄)	mg/l	< 0.2	0.2 - 0.5	0.5 - 1.0	> 1.0
Chloride (Cl)	mg/l	< 25	25 - 50	50 - 75	> 75
Fluoride (F)	mg/l	< 0.05	0.05 - 0.20	0.20 - 0.40	> 0.40
Alkalinity	CaCO ₃ mg/l	< 40	40 - 75	75 - 120	> 120
Nitrate (NO ₃)	mg/l	< 0.1	0.1 - 0.2	0.2 - 0.3	> 0.3
Phosphate (PO ₄)	mg/l	< 0.05	0.05 - 0.25	0.25 - 0.50	> 0.50
Sulphate (SO ₄)	mg/l	< 20	20 - 45	45 - 70	> 70
Bacteriological					
<i>E.coli</i>	counts/100ml	< 10	10 - 60	60 - 120	> 120
<i>Faecal coliforms</i>	counts/100ml		< 126	126 - 1000	> 1000

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