


Sample Points	Sample Point Description	Ammonia	Chloride	Fluoride	M-Alkalinity	Nitrate	Phosphate	Sulphate	Chemical Oxygen Demand	Conductivity	pH	E. coli	
VE	Vaal River @ Ermelo 26°21'46.17"S 30°6'31.15"E	0.12	9.60	0.20	48	0.33	0.17	17.50	16	18	7.2		
		0.12	12.00	0.13	65	<0.10	<0.05	21.00	19	23	7.1		
		0.12	<10	0.14	87	0.15	<0.05	14.00	15	22	7.2		
		0.12	<10	0.18	50	0.76	0.05	8.00	20	17	6.6		
ZD	Zaaihoek Dam 27°09'47.0"S 29°52'42.8"E	0.12	11.00	0.34	155	<0.10	<0.036	32.00	20	38	7.8		
		0.12	11.00	0.23	170	<0.10	<0.05	30.00	17	39	8.3		
		0.12	<10	0.25	41	<0.10	<0.05	18.00	<10	17	7.4		
VKV	Klein Vaal River @ Goedeheoop 26°49'12.19"S 30°8'12.00"E	0.12	5.90	0.06	64	0.15	<0.036	<5	11	16	7.41		
		0.12	<10	0.06	64	0.10	<0.05	7.60	11	17	7.2		
		0.12	<10	0.14	61	<0.10	0.06	11.00	<10	21	7.2		
		0.12	<10	0.10	34	0.97	<0.05	5.90	16	10	6.7		
VRA	Rietspruit below Amersfoort 26°54'47.20"S 29°52'19.22"E	0.12	12.45	0.14	200	<0.10	<0.036	27.00	12	46	8.23		
		0.12	22.00	0.20	215	0.15	<0.05	49.00	24	54	8.7		
		0.12	19.00	0.25	89	0.23	0.07	46.00	20	44	7.8		
		0.12	<10	0.25	93	1.10	<0.05	19.00	19	22	6.8		
VKK	Brummerspruit below Ermelo 26°30'49.51"S 29°54'27.37"E	8.80	35.50	0.16	170	0.47	2.08	91.50	41	62	7.52		
		18.00	37.00	0.21	170	0.74	2.10	120.00	72	69	7.2		
		10.00	41.00	0.29	155	<0.10	2.00	120.00	56	84	7.4		
		10.00	40.00	0.49	115	1.10	1.90	100.00	45	61	6.9		
VKR	Tweefontein @ Riverside 26°37'21.17"S 29°50'16.24"E	0.55	20.50	0.15	155	1.45	0.46	44.00	28	50	7.7		
		8.60	30.00	0.17	180	1.20	1.60	92.00	44	64	7.4		
		14.00	26.00	0.32	120	<0.10	2.60	60.00	35	60	6.9		
		3.80	26.00	0.56	77	2.10	0.44	72.00	34	46	7		
VK	Brummerspruit before Vaal River 26°46'51.26"S 29°48'23.51"E	0.12	19.50	0.16	150	1.14	0.19	43.00	25	50	7.94		
		0.12	25.00	0.22	165	3.60	0.58	69.00	22	55	8.2		
		9.20	25.00	0.28	110	1.10	2.50	57.00	34	52	7.5		
		1.00	23.00	0.30	94	1.60	0.23	74.00	29	44	6.8		
VAS	Vaal River above Standerton 26°51'18.56"S 29°41'51.61"E	0.12	12.00	0.13	125	0.23	<0.05	27.00	17	40	8.1		
		0.12	23.00	0.19	155	0.65	<0.05	72.00	19	50	8.8		
		0.12	17.00	0.21	85	0.25	0.05	27.00	22	38	7.4		
		0.12	<10	0.54	52	0.97	<0.05	21.00	25	20	6.5		
VGK	Geelklipspruit below Amersfoort 26°57'53.51"S 29°40'19.12"E	0.12	15.00	0.16	225	<0.10	<0.036	44.50	13	56	8.2		
		0.12	25.00	0.21	250	<0.10	<0.05	75.00	20	64	8.5		
		0.12	23.00	0.28	140	<0.10	0.26	65.00	23	62	8.4		
		0.12	12.00	0.26	155	0.85	0.10	39.00	20	41	7.5		
VBB	Blesbokspruit below Bethal 26°34'2.11"S 29°26'41.21"E	7.50	29.60	0.26	175	0.80	1.51	32.00	38	58	7.47		
		6.00	58.00	0.36	220	5.10	1.80	54.00	47	74	7.9		
		6.60	44.00	0.46	210	4.10	2.80	54.00	55	70	7.6		
		0.56	30.00	0.36	160	1.40	1.20	29.00	55	46	7		
VBS	Blesbokspruit @ Skaapkraal 26°38'17.35"S 29°27'6.24"E	0.32	31.30	0.27		1.71	0.45	41.00	38		8.6		
		0.12	58.00	0.43	225	2.00	0.87	68.00	42	72	9		
		1.60	65.00	0.61	215	0.60	2.00	35.00	59	74	7.8		
		0.12	21.00	0.96	145	<0.10	0.22	44.00	47	36	6.8		
VB	Blesbokspruit @ Vaal River Confluence 26°49'57.05"S 29°30'32.95"E	0.12	25.00	0.27	200	2.00	0.27	46.00	32	54	8		
		0.12	44.00	0.37	235	0.24	<0.05	86.00	33	70	8.4		
		0.12	66.00	0.82	170	<0.10	1.00	45.00	30	63	7.5		
		0.12	15.00	0.70	150	<0.10	0.28	44.00	34	36	6.9		
ND-LEEU	Leeuspruit @ New Denmark Colliery 26°51'16.79"S 29°19'31.56"E	0.12	17.50	0.19		0.22		34.50	30		8.02		
		0.12	33.00	0.34	230	0.14	<0.05	84.00	24	65	8.5		
		0.12	20.00	1.10	145	<0.10	<0.05	36.00	32	37	6.9		
VS	Vaal River @ Standerton 26°56'51.37"S 29°15'32.09"E	0.12	7.20	0.36	72	0.26	0.08	16.00	21	22	7.37		
		0.12	<10	0.19	74	0.12	<0.05	22.00	19	23	7.9		
		0.23	11.00	0.24	80	0.16	0.07	27.00	21	28	7.1		
		0.25	<10	0.56	85	0.88	<0.05	23.00	32	26	6.4		
S-BETHAL	Bethal Sewage Works 26°29'8.05"S 29°27'15.88"E	7.46	22.35	0.26	210	0.72	6.63	16.45	30	68	7.5	6420	
		13.00	52.00	0.37	180	1.00	3.30	46.00	70	62	7.6	28	
		5.40	38.00	0.28	195	1.90	0.87	20.00	38	64	7.3	4	
		7.50	40.00	0.20	170	2.40	3.30	34.00	42	60	7.2	200	
S-ESW	Ermelo Sewage Works 26°30'42.84"S 29°57'51.11"E	25.00	53.00	0.19	195	6.80	2.95	67.00	90	77	7.75	363	
		23.00	51.00	0.16	195	1.90	3.70	140.00	210	84	7.2	1673	
		29.00	70.00	0.34	210	0.31	3.40	86.00	72	100	7.1	263	
		5.40	57.00	0.43	110	4.30	1.70	130.00	165	65	7	43	
S-TUTU	Tutukani Sewage Works 26°47'36.70"S 29°17'30.43"E	0.81	95.00	0.18	130	17.00	0.33	41.00	22	56	7.22	153	
		2.20	100.00	0.18	93	1.80	0.31	60.00	28	52	7.2	95	
		2.30	71.00	0.22	120	1.30	1.50	60.00	31	61	7.4	26	
		12.00	83.00	0.87	130	0.32	1.80	32.00	25	59	7.1	94	
S-MAJUBA	Majuba Power Station Sewage Works 27°5'23.45"S 29°46'11.44"E	2.37		0.18		7.03	0.94	56.00	41		7.9	163	
		3.50	28.00	0.12	97	4.00	0.51	120.00	67	54	7.9	210	
		0.86	23.00	0.21	54	13.00	0.59	41.00	40	46	7.1	3	
		3.30	37.00	0.29	73	12.00	1.30	75.00	45	53	7.2	38	
S-ND-SOUTH	New Denmark Colliery - South Shaft 26°44'41.51"S 29°18'31.70"E	2.53	81.00	0.22	110	6.17	1.53	40.00	33	58	7.77	236	
		1.70	48.00	0.15	125	<0.10	1.20	47.00	41	68	7.6	125	
		1.50	100.00	0.27	120	9.10	1.60	43.00	30	72	7.8	6	
		3.20	90.00	0.80	180	12.00	1.80	34.00	36	70	7.1	1	

Sample Points	Sample Point Description	Ammonia	Chloride	Fluoride	M-Alkalinity	Nitrate	Phosphate	Suphate	Chemical Oxygen Demand	Conductivity	pH	E. coli
Sewage Works Compliance (where applicable) to General Standard (GN 1191 Oct 1999)												
S-BETHAL	Bethal Sewage Works 26°29'8.05"S 29°27'15.88"E	7.46	22	0.26	210.00	0.72	6.63	16.45	30	68	7.50	6420
		13.00	52	0.37	180	1.00	3.30	46.00	70	62	7.60	28
		5.40	38	0.28	195	1.90	0.87	20.00	38	64	7.30	4
		7.50	40	0.20	170	2.40	3.30	34	42	60	7.20	200
S-ESW	Ermelo Sewage Works 26°30'42.84"S 29°57'51.11"E	25.00	53	0.19	195	6.80	2.95	67.00	90	77	7.75	363
		23.00	51	0.16	195	1.90	3.70	140	210	84	7.20	1673
		29.00	70	0.34	210	0.31	3.40	86	72	100	7.10	263
		5.40	57	0.43	110	4.30	1.70	130	165	65	7.00	43
S-TUTU	Tutukani Sewage Works 26°47'36.70"S 29°17'30.43"E	0.81	95	0.18	130	17.00	0.33	41	22	56	7.22	153
		2.20	100	0.18	93	1.80	0.31	60	28	52	7.20	95
		2.30	71	0.22	120	1.30	1.50	60	31	61	7.40	26
		12.00	83	0.87	130	0.32	1.80	32	25	59	7.10	94
S-MAJUBA	Majuba Power Station Sewage Works 27° 5'23.45"S 29°46'11.44"E	2.37		0.18		7.03	0.94	56	41		7.90	163
		3.50	28	0.12	97	4.00	0.51	120	67	54	7.90	210
		0.86	23	0.21	54	13.00	0.59	41	40	46	7.10	3
		3.30	37	0.29	73	12.00	1.30	75	45	53	7.20	38
S-ND-SOUTH	New Denmark Colliery - South Shaft 26°44'41.51"S 29°18'31.70"E	2.53	81	0.22	110	6.17	1.53	40	33	58	7.77	236
		1.70	48	0.15	125	<0.10	1.20	47.00	41	68	7.60	125
		1.50	100	0.27	120	9.10	1.60	43.00	30	72	7.80	6
		3.20	90	0.80	180	12.00	1.80	34.00	36	70	7.10	1

Key

VE	Vaal River above Standerton	0.12	-	1 Apr 11 - 30 Jun 11
		0.12	-	1 July 11 - 30 Sept 11
		0.12	-	1 Oct 11 - 31 Dec 31
		0.12	-	1 Jan 12 - 31 Mar 12

Water Quality Guidelines

	-	Ideal
	-	Acceptable
	-	Tolerable
	-	Unacceptable

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			
Faecal coliforms	counts/100ml	<1000	>=1000

** After removal of algae