

Rand Water
Quarterly Water Quality Status of the Blesbokspruit Catchment

01 Jan 2019 - 31 Dec 2019



Sample Points	Sample Point Description	Quarter	Aluminium	Ammonia	Chemical Oxygen Demand	Chloride	Conductivity	Daphnia Toxicity	Dissolved Oxygen	E.coli	Fluoride	Iron	Magnesium	Manganese	Nitrate	pH	Phosphate	Sodium	Sulphate	Suspended Solids
B1	Outflow from New Kleinfontein Dam 26° 10.979'S 28° 20.051'E	1	0.03	2.23		39	40		1.1		0.51	0.18	13	0.20	4.67	7.7	0.83	47	55	
		2	0.08	0.27		36	33		2.5		0.47	0.06	18	0.09	0.87	7.5	0.25	50	60	
		3	0.03	1.27		44	42		4.9		0.56	0.05	10	0.03	0.50	7.6	0.31	31	50	
		4	0.06	0.09		62	45		5.9		1.12	0.07	18	0.10	1.17	7.5	0.25	59	210	
B2	Outflow from Van Ryn Dam 26° 09.961'S 28° 22.264'E	1	0.03	3.71		49	40		0.8		0.53	0.22	8	0.05	0.50	7.5	1.10	27	49	
		2	0.03	10.20		55	61		3.0		0.60	0.28	16	0.15	1.20	7.7	1.43	59	61	
		3	0.03	12.70		67	73		3.8		0.63	0.42	10	0.14	0.92	7.9	1.58	68	58	
		4	0.09	6.48		68	72		5.6		1.15	0.62	12	0.34	0.93	7.9	1.95	64	61	
B3	Stream from Brakpan Lake 26° 12.876'S 28° 22.756'E	1	0.03	0.23		60	47		0.9		0.47	0.31	10	0.15	0.50	7.0	0.33	49	32	
		2	0.03	0.08		51	49		2.0		0.56	0.08	9	0.08	0.73	7.3	0.25	47	69	
		3	0.03	8.10		72	63		2.8		0.60	0.30	11	0.47	0.50	7.3	0.86	56	42	
		4	0.07	11.65		88	77		0.5		1.28	0.48	15	0.67	0.57	7.4	3.85	65	29	
B4	Causeway @ Alexander Dam 26° 12.673'S 28° 24.879'E	1	0.03	0.05		42	42		1.4		0.51	0.07	9	0.06	0.50	7.8	0.32	34	64	
		2	0.05	0.06		49	44		2.9		0.60	0.05	10	0.03	0.83	7.6	0.29	33	81	
		3	0.03	4.26		63	66		4.9		0.56	0.02	13	0.04	0.97	7.9	0.53	61	76	
		4	0.06	3.60		67	59		5.6		0.76	0.04	10	0.04	0.67	7.7	2.38	66	91	
B13	Stream from Daveyton below Welgedacht WWTW 26° 11.941'S 28° 28.779'E	1	0.05	0.12		46	48		1.0	2,680	0.49	0.16	10	0.07	1.95	7.6	0.53	47	47	
		2	0.03	1.24		53	61		1.1	48	0.70	0.07	18	0.15	2.18	7.5	0.55	55	83	
		3	0.03	2.36		90	75		3.7	155	1.17	0.11	11	0.13	1.53	7.4	2.03	91	81	
		4	0.06	2.72		65	67		1.5	25,151	0.84	0.18	16	0.23	1.66	7.3	0.61	80	91	
B5	Blesbokspruit @ Welgedacht 26° 12.871'S 28° 28.803'E	1	0.03	1.18		60	69		0.5		0.61	0.16	14	0.42	1.14	7.8	0.52	58	95	
		2	0.04	1.34		58	65		1.7		0.74	0.12	12	0.08	1.43	7.5	0.43	49	98	
		3	0.06	1.99		96	91		3.7		0.58	0.08	18	0.11	1.50	7.6	1.04	121	137	
		4	0.09	2.41		59	83		1.1		0.83	0.21	16	0.37	1.30	7.4	0.34	66	142	
B16	Blesbokspruit @ Grootvlei Mine Train Bridge 26° 15.332'S 28° 29.896'E	1	0.03	0.56		65	92		0.7		0.82	0.05	21	0.18	0.90	7.6	0.61	71	217	
		2	0.03	0.22		76	148		1.1		1.30	0.08	35	0.14	0.84	7.6	0.27	160	530	
		3	0.03	0.17		100	167		2.9		1.97	0.06	49	0.19	1.43	7.5	0.31	153	680	
		4	0.10	0.59		91	152		4.4		1.83	0.04	41	0.43	1.01	7.5	0.59	80	610	
B6	Klein Blesbokspruit @ Selection Park 26° 16.979'S 28° 26.640'E	1	0.05	0.27		35	41		0.9		0.54	0.30	10	0.50	0.84	7.6	0.25	27	78	
		2	0.18	0.06		33	42		3.9		0.51	0.26	13	0.32	0.50	7.7	0.25	40	67	
		3	0.05	0.32		31	39		7.9		0.45	0.25	11	0.39	0.71	7.8	0.25	28	40	
		4	0.09	0.45		31	41		3.6		1.04	0.41	18	1.54	0.90	7.3	0.25	43	172	
B15	Blesbokspruit on N17 Toll Road @ Springs 26° 16.287'S 28° 30.231'E	1	0.03	0.40		56	101		0.6		0.67	0.04	20	0.60	0.56	7.6	0.73	75	170	
		2	0.03	0.24		74	137		3.0		1.47	0.03	25	0.16	0.66	7.5	0.31	68	498	
		3	0.04	3.48		110	168		3.4		1.73	0.06	50	0.22	1.17	7.6	0.68	142	690	
		4	0.10	0.33		94	147		2.6		1.73	0.04	42	0.34	0.53	7.4	0.55	294	540	
B17	Blesbokspruit @ Marievale Bird Sanctuary 26° 21.536'S 28° 30.467'E	1	0.03	0.05		87	112		0.7		0.91	0.03	25	0.25	0.50	7.8	0.76	94	265	
		2	0.03	0.06		73	125		2.6		1.17	0.03	32	0.25	0.50	7.6	0.57	88	407	
		3	0.03	0.16		86	147		4.1		1.67	0.02	44	0.83	0.50	7.7	0.34	142	522	
		4	0.16	1.63		110	173		2.5		2.20	0.16	38	1.02	0.50	7.6	0.90	124	667	
B11	Blesbokspruit on R42 bridge @ Nigel 26° 23.433'S 28° 29.838'E	1	0.03	0.07		85	113		0.8		1.02	0.05	26	0.29	0.50	7.9	0.77	88	298	
		2	0.04	0.08		75	122		2.8		1.17	0.05	29	0.11	0.50	7.9	0.48	83	402	
		3	0.03	0.23		103	158		5.6		1.80	0.02	46	0.24	0.50	7.8	0.34	140	603	
		4	0.25	3.74		115	172		4.0		1.97	0.31	36	0.85	0.50	7.7	0.67	119	637	
B7	Stormwater drain from Nigel Dam 26° 24.933'S 28° 27.958'E	1	0.05	0.11		53	83		1.5		1.05	0.21	18	0.42	0.50	6.7	0.60	71	202	
		2	0.03	0.05		42	68		3.4		0.95	0.17	14	0.32	0.50	7.7	0.25	44	170	
		3	0.03	0.09		44	76		5.5		1.00	0.03	20	0.57	0.50	7.7	0.25	66	197	
		4	0.09	0.23		70	96		4.0		1.70	0.06	34	1.94	0.50	7.4	0.28	84	422	
B8	Blesbokspruit @ Nigel 26° 26.313'S 28° 27.361'E	1	0.05	0.36		78	111		0.8	9,175	0.93	0.05	26	0.07	0.50	8.0	0.62	86	271	
		2	0.03	0.11		73	118		2.0	2,114	1.20	0.10	21	0.17	0.50	8.0	0.46	65	388	
		3	0.06	0.15		101	158		4.7	2,804	1.97	0.06	44	0.38	0.50	8.0	0.28	124	595	
		4	0.17	1.50		99	170		3.8	655	1.88	0.04	43	0.57	0.70	7.8	0.62	114	589	
B14	Blesbokspruit @ Jameson Park 26° 28.717'S 28° 25.531'E	1	0.13	1.82		41	61		0.5		0.65	0.34	14	0.26	2.50	7.5	0.57	46	129	
		2	0.05	1.58		60	93		2.9		0.90	0.09	21	0.10	1.00	7.6	0.61	75	257	
		3	0.07	0.52		77	116		3.1		1.39	0.14	33	0.26	1.28	7.8	1.05	105	379	
		4	0.14	0.31		102	155		2.8		1.90	0.04	44	0.68	1.63	7.5	0.48	90	550	

Rand Water
Quarterly Water Quality Status of the Blesbokspruit Catchment

01 Jan 2019 - 31 Dec 2019



Sample Points	Sample Point Description	Quarter	Aluminium	Ammonia	Chemical Oxygen Demand	Chloride	Conductivity	Daphnia Toxicity	Dissolved Oxygen	E.coli	Fluoride	Iron	Magnesium	Manganese	Nitrate	pH	Phosphate	Sodium	Sulphate	Suspended Solids
B12	Stream from Kaydale Station 26° 28.627'S 28° 24.266'E	1	0.03	0.23		76	96		0.5		0.88	0.08	22	0.14	1.28	7.7	0.46	82	220	
		2	0.22	1.65		45	67		1.5		0.80	0.26	18	0.15	2.17	7.5	0.56	51	153	
		3	0.08	4.55		61	89		4.4		0.80	0.11	21	0.31	0.87	7.5	0.82	72	217	
		4	0.11	2.75		34	47		2.3		0.66	0.15	10	0.09	3.50	7.4	0.94	47	57	
B10	Blesbokspruit Weir @ Heidelberg 26° 30.641'S 28° 21.049'E	1	0.06	1.11	29	67	96	100	2.1	5,509	0.87	0.16	20	0.12	1.18	7.9	0.63	66	214	85
		2	0.06	0.19	17	66	107	100	3.6	1,041	1.11	0.10	24	0.09	1.28	7.9	0.48	68	334	29
		3	0.07	0.44	20	81	133	99	4.0	1,387	1.45	0.10	33	0.24	1.97	7.7	0.43	101	424	15
		4	0.16	0.96	28	88	127	100	3.0	5,702	1.72	0.03	37	0.52	2.35	7.6	0.56	116	436	83
S1	Suikerbosrant River below Balfour 26° 37.793'S 28° 17.797'E	1	0.05	0.10		44	44		0.6	1,958	0.49	0.14	11	0.05	0.54	7.6	0.41	32	12	
		2	0.11	0.07		28	35		2.4	188	0.43	0.17	12	0.10	0.52	7.6	0.26	25	17	
		3	0.03	0.18		50	61		4.9	36	0.42	0.03	17	0.02	2.41	7.7	0.25	47	24	
		4	0.10	0.15		62	61		0.9	3,602	0.57	0.09	21	0.14	0.50	7.6	0.25	56	17	
S2	Suikerbosrant River Weir @ Three Rivers 26° 40.253'S 28° 01.828'E	1	0.04	0.12	22	73	88	100	1.7	407	0.86	0.08	20	0.03	1.28	8.1	0.42	65	217	30
		2	0.10	0.10	16	66	101	100	3.6	389	1.05	0.11	23	0.07	1.35	8.0	0.32	66	305	19
		3	0.04	0.94	19	87	121	100	5.3	165	1.36	0.07	34	0.07	2.13	8.0	0.32	117	442	19
		4	0.23	0.09	30	96	119	100	3.1	603	1.75	0.11	29	0.06	1.38	7.8	0.35	169	451	26

Key

B12	Stream from Kaydale Station 26° 28.627'S 28° 24.266'E	1	0.03	0.23	- 1 Jan to 31 Mar 2019
		2	0.22	1.65	- 1 Apr to 30 Jun 2019
		3	0.08	4.55	- 1 Jul to 30 Sep 2019
		4	0.11	2.75	- 1 Oct to 31 Dec 2019

Water Quality Guidelines

	- Ideal
	- Acceptable
	- Tolerable
	- Unacceptable
	- Not analysed

Variables	Measured as	Ideal Catchment Background	Acceptable Management Target	Tolerable Interim Target	Unacceptable
Physical					
Conductivity	mS/m	< 45	45 - 70	70 - 120	> 120
Dissolved Oxygen (O ₂)	mg/l O ₂		> 6.0	5.0 - 6.0	< 5.0
pH	pH units	6.5 - 8.5			< 6.5; > 8.5
Suspended Solids	mg/l	< 20	20 - 30	30 - 55	> 55
Organic					
Chemical Oxygen Demand (COD)	mg/l	< 20	20 - 35	35 - 55	> 55
Macro Elements					
Aluminium (Al)	mg/l		< 0.3	0.3 - 0.5	> 0.5
Ammonia (NH ₄)	mg/l	< 0.1	0.1 - 1.5	1.5 - 5.0	> 5.0
Chloride (Cl)	mg/l	< 80	80 - 150	150 - 200	> 200
Fluoride (F)	mg/l	< 0.19	0.19 - 0.70	0.70 - 1.00	> 1.00
Iron (Fe)	mg/l	< 0.1	0.1 - 0.5	0.5 - 1.0	> 1.0
Magnesium (Mg)	mg/l	< 8	8 - 30	30 - 70	> 70
Manganese (Mn)	mg/l	< 0.2	0.2 - 0.5	0.5 - 1.0	> 1.0
Nitrate (NO ₃)	mg/l	< 0.5	0.5 - 3.0	3.0 - 6.0	> 6.0
Phosphate (PO ₄)	mg/l	< 0.2	0.2 - 0.4	0.4 - 0.6	> 0.6
Sodium (Na)	mg/l	< 70	70 - 100	100 - 150	> 150
Sulphate (SO ₄)	mg/l	< 150	150 - 300	300 - 500	> 500
Bacteriological					
<i>E. coli</i>	counts/100ml	< 130	130 - 200	200 - 400	> 400
Faecal coliforms	counts/100ml		< 126	126 - 1,000	> 1,000
Biological					
<i>Daphnia</i>	% survival	100	90 - 100	80 - 90	< 80