

# Rand Water

## Quarterly Water Quality Status of the Wilge River Catchment

Oct 2017 - Sept 2018



Sample Points	Sample Point Description	Quarter	Ammonia	Chemical Oxygen Demand	Chloride	Conductivity	E.coli	Fluoride	M-Alkalinity	Nitrate	pH	Phosphate	Sulphate
WLA	Lesotho Highlands Ash River Outfall 28° 26.369'S 28° 23.827'E	1	0.12	15	<10	10	23	0.19	300	0.44	7.0	<0.2	<5.0
		2	<0.05	<10	<1.7	11	714	<0.19	32	0.24	7.0	<0.2	4
		3	0.06	22	<1.7	10	149	<0.19	40	0.48	7.3	<0.2	6
		4	<0.05	<10	<2	8	35	<0.19	36	<0.44	7.4	<0.2	6
WLB	Wilge Liebenbergsvlei @ Bethlehem 28° 11.448'S 28° 20.616'E	1	0.12	19	<10	10		0.19	290	0.44	7.1	<0.2	<5.0
		2	0.23	<10	38	11		0.29	39	<0.44	7.1	<0.2	16
		3	0.06	30	4	11		<0.19	77	<0.44	7.2	<0.2	6
		4	<0.05	<10	<2	8		<0.19	37	<0.44	7.5	<0.2	6
WJ	Jordaanspruit below Bethlehem 28° 10.027'S 28° 18.680'E	1	14.00	27	46	56		0.19	350	0.44	7.1	3.20	18
		2	3.70	38	31	38		0.20	148	0.21	7.1	2.18	12
		3	1.58	25	23	21		<0.19	61	0.90	7.2	0.44	18
		4	11.03	32	43	51		<0.19	163	0.86	7.3	1.97	22
WLBB	Wilge River below Bethlehem 28° 4.051'S 28° 18.632'E	1	0.12	21	<10	10		0.19	295	0.44	7.1	<0.2	5
		2	<0.05	<10	3	10		<0.19	37	1.20	7.2	<0.2	5
		3	0.07	44	3	10		<0.19	38	<0.44	7.2	<0.2	7
		4	0.05	<10	<2	11		<0.19	38	<0.44	7.5	<0.2	6
WLR	Wilge River @ Reitz 27° 42.075'S 28° 19.380'E	1	0.12	24	<10	9		0.19	42	0.44	7.2	<0.2	5
		2	<0.05	<10	2	10		<0.19	37	0.17	7.3	<0.2	4
		3	0.07	49	3	13		<0.19	107	<0.44	7.2	<0.2	7
		4	0.02	<10	2	10		<0.19	37	<0.44	7.5	<0.2	7
WL	Liebenbergsvlei River between Tweeling & Frankfort 27° 28.249'S 28° 31.518'E	1	0.57	13	<10	10		0.19	285	160.00	7.1	<0.2	<5.0
		2	<0.05	11	3	12		<0.19	39	0.83	7.3	<0.2	6
		3	0.07	18	3	13		<0.19	48	<0.44	7.1	<0.2	7
		4	<0.05	<10	2	12		<0.19	38	<0.44	7.5	<0.2	6
EQQ	Elands River below Qwa-Qwa 28° 22.557'S 28° 51.635'E	1	2.30	29	10	34		0.19	125	0.44	6.9	0.46	14
		2	0.49	15	6	19		<0.15	60	0.98	7.2	0.45	9
		3	1.17	24	14	27		<0.19	90	0.64	7.4	<0.2	12
		4	3.83	15	18	39		<0.19	130	0.56	7.2	0.35	13
WE	Elands River @ Aberfeldy 28° 13.814'S 28° 51.046'E	1	1.50	20	17	36		0.19	365	1.00	7.1	0.37	12
		2	0.09	16	7	21		0.17	67	0.94	7.3	<0.2	10
		3	0.20	15	13	25		<0.19	82	1.25	7.4	<0.2	12
		4	0.82	17	17	36		<0.19	142	2.03	7.6	<0.2	13
STERK	Sterkfontein Dam 28° 24.500'S 29° 2.238'E	1											
		2	<0.05	<10	2	14		<0.19	43	<0.44	7.2	<0.2	4
		3											
		4	0.15	<10	2	11		<0.19	42	<0.44	7.6	<0.2	4
WN	Nuwejaarspruit d/s of Sterkfontein Dam 28° 17.321'S 29° 5.465'E	1	0.12	23	<10	11		0.19	50	0.44	7.2	<0.2	<5.0
		2	<0.05	15	3	13		<0.19	77	0.94	7.1	<0.2	3
		3	0.08	33	4	14		<0.19	105	<0.44	7.5	<0.2	5
		4	0.10	<10	2	14		<0.19	52	<0.44	7.6	<0.2	5
WAH	Wilge above Harrismith 28° 18.366'S 29° 7.968'E	1	0.20	14	<10	15		0.19	405	0.44	7.2	<0.2	11
		2	0.94	27	4	14		<0.19	31	0.12	7.0	0.37	6
		3	0.10	23	14	32		<0.19	72	<0.44	6.7	<0.2	6
		4	<0.05	39	5	35		<0.19	106	<0.44	7.5	<0.2	7
WH	Wilge River below Harrismith 28° 13.332'S 28° 57.945'E	1	0.58	20	12	27		0.20	315	0.86	7.2	0.33	10
		2	0.21	19	4	10		<0.19	48	3.80	6.9	<0.2	5
		3	1.03	15	8	21		<0.19	64	0.89	7.1	<0.2	7
		4	2.10	12	14	24		<0.19	91	0.81	7.2	<0.2	9

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MR	Meul River downstream of Ribbokspruit 28° 1.591'S 29° 15.009'E	1	<0.092	14	19	28		0.19	105	0.44	7.1	0.20	8	
		2	<0.05	12	6	14		<0.19	40	<0.44	7.3	0.76	9	
		3												
		4												
WM	Mollen River @ Letuka 28° 1.403'S 28° 59.691'E	1	<0.092	30	19	38		0.26	150	0.44	7.7	0.20	17	
		2	<0.05	11	5	15		<0.19	37	<0.44	7.0	<0.2	10	
		3												
		4												
WMW	Wilge Meul @ Waaiwater 27° 54.204'S 28° 48.452'E	1	0.12	17	14	30		0.20	125	0.62	7.6	<0.2	10	
		2	<0.05	16	4	8		<0.19	23	0.27	6.9	<0.2	4	
		3	0.06	17	10	25		<0.19	115	0.82	7.5	<0.2	10	
		4	<0.05	10	15	31		<0.19	123	1.03	7.9	<0.2	13	
WC	Cornelis River below Warden 27° 50.555'S 28° 57.644'E	1												
		2												
		3												
		4												
WAF	Wilge above Frankfort 27° 18.607'S 28° 31.977'E	1	<0.05	19	12	31		0.22	127	0.44	7.5	<0.2	16	
		2	0.05	14	4	15		<0.19	39	0.48	7.1	<0.2	7	
		3	0.09	13	10	20		<0.19	71	<0.44	7.4	<0.2	14	
		4	0.05	12	16	30		0.19	119	<0.44	7.7	<0.2	21	
WF	Wilge River @ Frankfort 27° 16.311'S 28° 29.489'E	1	0.14	20	<10	13	7 120	0.19	50	0.44	7.0	<0.2	6	
		2	<0.2	18	3	16	727	0.22	78	4.30	7.5	0.10	16	
		3	0.07	32	4	19	251	<0.19	60	<0.44	7.6	<0.2	8	
		4	0.08	20	6	13	348	<0.19	47	<0.44	7.5	<0.2	13	

### Key

WLA	Lesotho Highlands Ash River Outfall 28° 26.369'S 28° 23.827'E	1	0.12	- 1 Oct to 31 Dec 2017
		2	<0.05	- 1 Jan to 31 Mar 2018
		3	0.06	- 1 Apr to 30 Jun 2018
		4	<0.05	- 1 Jul to 30 Sept 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	Quarter	Ammonia	Chemical Oxygen Demand	Chloride	Conductivity	Faecal coliforms	Fluoride	M-Alkalinity	Nitrate	pH	Phosphate	Sulphate
S-BETH	Bethlehem Sewage Works 28° 12.823'S 28° 18.656'E	1	24.00	57	35	55	2 130 770	0.19	210	0.44	7.0	2.50	24
		2	21.33	172	31	57	2 135 667	0.38	193	<0.44	6.9	3.10	20
		3	17.00	98	36	55	4 896 000	<0.19	172	<0.44	7.0	1.50	35
		4	26.67	128	36	56	2 677 667	<0.19	197	<0.44	7.0	2.23	28
S-HSW	Harrismith Sewage Works 28° 16.622'S 29° 5.363'E	1	15.00	1240	42	89	428 480	0.32	320	0.56	6.7	6.80	7
		2	27.33	2083	42	77	594 000	0.37	308	0.44	6.7	3.54	10
		3	32.00	147	46	84	5 059 333	<0.19	248	<0.44	6.8	3.27	11
		4	30.00	123	46	91	6 083 800	<0.19	323	<0.44	6.5	2.33	14
S-QWAQWA	Qwa-Qwa Sewage Works 28° 30.320'S 28° 49.472'E	1	2.00	97	40	45	17	0.19	140	0.44	8.2	<0.2	22
		2											
		3	0.23	77	35	89	10	<0.19	185	<0.44	7.4	4.60	10
		4											
S-TSIAME	Tsiame Sewage Works 28° 16.780'S 28° 59.287'E	1	7.30	20	24	41	158 860	0.19	115	0.44	6.9	3.30	28
		2	23.00	90	24	57	28 392	0.45	198	<0.44	7.1	5.27	20
		3	25.33	75	37	69	35 944	<0.19	207	<0.44	7.4	4.00	31
		4	25.00	81	39	64	2 751	<0.19	220	<0.44	7.4	2.93	46

**Key**

S-QWAQWA	Qwa-Qwa Sewage Works 28° 30.320'S 28° 49.472'E	1	2.00	- 1 Oct to 31 Dec 2017
		2		- 1 Jan to 31 Mar 2018
		3	0.23	- 1 Apr to 30 Jun 2018
		4		- 1 Jul to 30 Sept 2018

**Water Quality Guidelines**

	- Acceptable
	- Unacceptable

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

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

\*After removal of algae

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