



RAND WATER

Quarterly Water Quality Status of the Wilge River Catchment

1 April 2013 - 31 March 2014






Sample Points	Sample Point Description	Ammonia (NH4)	Chloride (Cl)	Fluoride (F)	M-Alkalinity (M-Alk)	Nitrate (NO3)	Phosphate (PO4)	Sulphate (SO4)	Chemical Oxygen Demand (COD)	Conductivity (EC)	pH	E. coli
WLA	Lesotho Highlands Ash River Outfall 28°26'22.13"S 28°23'49.64"E	0.10	<10	0.08	39	0.28	0.05	<5.0	11	9	7.00	3
		0.10	<10	0.08	34	0.12	0.07	<5.0	<10	8	7.10	3
		0.20	<10	0.08	37	1.20	0.08	44	<10	10	7.00	1,930
		0.18	<10	0.08	38	0.16	0.11	<5.0	<10	9	7.20	125
WLS	Ash River - Soulsport Dam 28°16'20.27"S 28°22'22.10"E	0.10	<10	0.08	38	0.62	0.05	5	<10	9	6.90	
		0.10	<10	0.08	35	0.17	0.07	<5.0	<10	8	7.10	
		0.25	14	0.27	93	1.02	0.28	22	17	28	7.27	
		0.18	<10	0.08	38	0.37	0.08	<5.0	<10	9	7.40	
WLB	Wilge Liebenbergsvlei @ Bethlehem 28°11'27.05"S 28°20'37.05"E	0.10	<10	0.08	44	0.75	0.05	6	<10	9	7.20	
		0.10	<10	0.08	36	0.14	0.08	<5.0	<10	6	7.10	
		0.20	<10	0.13	39	0.61	0.12	10	<10	11	7.00	
		0.18	<10	0.08	46	0.18	0.08	6	<10	11	7.30	
WJA	Jordaanspruit above Bethlehem 28°15'1.05"S 28°18'31.85"E	0.10	<10	0.20	110	1.00	0.08	6	27	24	7.90	
		0.10	12	0.23	110	0.30	0.05	9	24	26	7.90	
		0.20	<10	0.20	130	1.40	0.08	13	23	34	7.80	
		0.82	18	0.22	100	0.91	0.07	20	37	37	7.00	
WJ	Jordaanspruit below Bethlehem 28°10'0.45"S 28°18'38.66"E	0.30	19	0.19	110	1.60	0.07	21	31	38	7.50	
		1.60	26	0.17	125	2.20	0.23	23	34	42	7.40	
		0.76	22	0.25	105	1.60	0.26	20	30	35	7.60	
		0.10	<10	0.08	42	0.31	0.12	5	<10	9	7.00	
WLB	Wilge River below Bethlehem 28°6'11.72"S 28°17'49.43"E	0.10	<10	0.10	36	0.16	0.05	5	<10	8	7.10	
		0.20	<10	0.18	39	0.50	0.12	10	<10	12	6.90	
		0.18	<10	0.13	50	0.13	0.08	6	13	12	7.30	
		0.13	<10	0.08	41	0.81	0.08	6	<10	9	7.00	
WLR	Wilge River @ Reitz 27°45'28.18"S 28°19'39.05"E	0.28	<10	0.10	37	0.18	0.15	5	<10	8	7.10	
		0.20	<10	0.14	40	0.82	0.08	13	<10	11	7.00	
		0.18	<10	0.17	52	0.31	0.08	8	18	13	7.30	
		0.10	<10	0.08	43	0.50	0.16	10	10	10	6.90	
WL	Liebenbergsvlei River between Tweeling & Frankfort 27°25'51.31"S 28°31'35.66"E	0.10	<10	0.13	38	0.10	0.05	6	<10	9	7.10	
		0.20	<10	0.16	43	1.40	0.08	7	<10	14	6.90	
		0.18	<10	0.16	55	0.11	0.10	6	22	14	7.30	
		0.10	<10	0.08	86	1.10	0.20	10	<10	22	7.30	
EQQ	Elands River below Qwa-Qwa 28°22'33.68"S 28°51'38.22"E	0.31	14	0.10	110	2.90	0.36	16	17	31	7.60	
		0.25	11	0.11	92	1.80	0.44	14	16	29	7.20	
		0.18	<10	0.08	64	0.42	0.10	6	<10	16	7.30	
		0.10	<10	0.16	99	0.72	0.05	12	10	23	7.40	
WE	Elands River @ Aberfeldy 28°13'48.53"S 28°51'3.03"E	0.10	13	0.11	130	1.70	0.15	14	14	33	8.20	
		0.34	<10	0.23	99	1.10	0.21	16	20	28	7.20	
		0.18	<10	0.13	71	0.38	0.11	7	11	18	7.50	
		0.10	<10	0.13	49	<0.10	0.05	<5.0	<10	11	7.70	
STERK	Sterkfontein Dam 28°24'30.30"S 29°2'15.00"E	0.10	<10	0.16	44	<0.10	0.05	12	<10	10	7.20	
		0.20	<10	0.19	45	0.35	0.27	44	<10	14	7.20	
		0.18	<10	0.16	44	<0.10	0.13	<5.0	<10	10	7.40	
		0.10	<10	0.15	44	0.13	0.05	<5.0	<10	10	7.00	
WN	Nuewjaarspruit d/s of Sterkfontein Dam 28°17'19.39"S 29°5'28.26"E	0.10	<10	0.14	51	0.24	0.05	8	<10	11	7.40	
		0.20	<10	0.14	56	0.71	0.12	<5.0	15	15	7.10	
		0.18	<10	0.16	46	<0.10	0.08	<5.0	20	12	7.20	
		0.10	14	0.32	25	0.57	0.05	29	<10	7	6.70	
WAH	Wilge above Harrismith 28°18'27.90"S 29° 7'52.48"E	0.10	<10	0.10	37	<0.10	0.10	12	<10	10	6.90	
		0.20	14	0.23	35	1.60	0.08	55	11	12	6.70	
		0.18	<10	0.08	24	0.11	0.08	<5.0	15	6	6.90	
		0.25	<10	0.08	28	0.71	0.21	5	12	11	6.60	
WH	Wilge River below Harrismith 28°13'20.10"S 28°57'56.96"E	1.50	<10	0.12	78	0.75	0.29	7	22	22	7.90	
		1.20	<10	0.13	64	1.50	0.13	11	20	21	6.90	
		0.26	<10	0.11	28	0.36	0.14	<5.0	18	9	6.90	
		0.10	<10	0.14	62	0.15	0.05	9	<10	16	7.20	
MR	Meul River downstream of Ribbokspruit 28°1'35.48"S 29°15'0.51"E	0.10	10	0.23	125	0.13	0.07	22	<10	30	8.00	
		0.25	14	0.27	93	1.02	0.28	22	17	28	7.27	
		0.18	<10	0.22	54	<0.10	0.10	<5.0	18	14	7.30	
		0.10	<10	0.12	125	0.11	0.05	6	<10	30	8.00	
WM	Mollen River @ Letuka 28° 1'24.18"S 28°59'41.27"E	0.25	<10	0.27	93	1.00	0.28	22	17	28	7.30	
		0.20	14	0.26	125	0.33	0.08	20	23	34	7.70	
		0.18	<10	0.24	56	<0.10	0.08	6	16	15	7.30	
		0.10	<10	0.10	64	0.39	0.05	7	<10	16	7.20	
WMW	Wilge Meul @ Waaiwater 27°54'11.90"S 28°48'27.91"E	0.10	10	0.18	120	0.39	0.07	12	16	29	8.40	
		0.20	<10	0.16	90	0.76	0.08	17	19	26	7.40	
		0.18	<10	0.18	55	0.26	0.08	<5.0	18	14	7.40	
		0.25	<10	0.15	55	0.69	0.20	32	37	16	7.10	
WC	Cornelis River below Warden 27°50'36.89"S 28°57'42.03"E	0.25	<10	0.34	100	0.12	0.10	12	30	25	7.40	
		0.10	<10	0.14	68	0.22	0.05	8	14	17	7.20	
		0.10	11	0.16	140	0.45	0.05	26	12	33	7.90	
		0.20	12	0.19	140	0.39	0.08	52	24	37	7.50	
WAF	Wilge above Frankfort 27°18'36.42"S 28°31'58.65"E	0.18	<10	0.18	59	0.26	0.08	6	18	16	7.30	
		0.10	<10	0.13	49	0.32	0.05	6	<10	12	7.00	86
		0.10	<10	0.08	44	0.10	0.05	6	<10	11	7.20	71
		0.20	<10	0.08	65	0.62	0.08	11	16	18	7.10	870
WF	Wilge River @ Frankfort 27°16'18.00"S 28°29'28.41"E	0.18	<10	0.18	56	0.24	0.08	6	15	14	7.30	690

Sample Points	Sample Point Description	Ammonia (NH4)	Chloride (Cl)	Fluoride (F)	M-Alkalinity (M-ALK)	Nitrate (NO3)	Phosphate (PO4)	Sulphate (SO4)	Chemical Oxygen Demand (COD)	Conductivity (EC)	pH	E. coli
S-BETH	Bethlehem Sewage Works 28°12'49.19"S 28°18'35.16"E	12.00	35	0.08	160	1.30	0.63	31	40	50	7.20	68,950
		13.00	30	0.13	135	0.59	0.95	30	66	47	7.20	373,810
		11.47	28	0.16	138	0.29	1.07	79	91	52	7.10	1040233
		18.00	30	0.19	175	0.51	0.41	18	60	54	7.50	1,203,300
S-HSW	Harrismith Sewage Works 28°16'47.50"S 29° 5'49.69"E	20.00	34	0.08	155	0.39	2.90	18	77	68	7.20	524,330
		12.00	27	0.10	175	3.90	2.10	11	290	66	7.20	510,040
		17.00	31	0.26	260	<0.10	2.20	30	85	70	7.10	2,548,500
		13.00	26	0.18	210	<0.10	2.30	48	465	58	6.90	1,732,900
S-QWAQWA	Qwa-Qwa Sewage Works 28°30'29.90"S 28°49'34.21"E	1.90	33	0.12	67	18.00	3.10	29	18	41	5.80	88
		11.00	37	0.17	16	12.00	3.50	34	34	39	6.50	21
		0.65	30	0.10	45	10.00	2.10	53	28	46	6.70	325
		0.25	22	0.08	67	12.00	1.60	23	22	38	7.10	1,380
S-TSIAME	Tsiame Sewage Works 28°16'47.10"S 28°59'20.70"E	2.90	47	0.08	73	0.94	1.80	33	24	43	7.40	2,040
		28.00	34	0.10	250	0.21	4.10	24	93	65	7.30	244,710
		21.00	32	0.15	170	0.31	3.70	75	77	59	7.30	67,790
		14.00	26	0.22	165	1.30	1.60	22	39	52	7.30	38,960

Compliance of Sewage Work to General Standard (GN 1191 Oct 1999), where applicable

Sample Points	Sample Point Description	Ammonia (NH4)	Chloride (Cl)	Fluoride (F)	M-Alkalinity (M-ALK)	Nitrate (NO3)	Phosphate (PO4)	Sulphate (SO4)	Chemical Oxygen Demand (COD)	Conductivity (EC)	pH	E. coli
S-BETH	Bethlehem Sewage Works 28°12'49.19"S 28°18'35.16"E	12.00	35	0.08	160	1.30	0.63	31	40.00	50.00	7.20	68,950
		13.00	30	0.13	135	0.59	0.95	30	66.00	47.00	7.20	373,810
		11.47	28	0.16	138	0.29	1.07	79	91.33	52.00	7.10	1040233
		18.00	30	0.19	175	0.51	0.41	18	60.00	54.00	7.50	1,203,300
S-HSW	Harrismith Sewage Works 28°16'47.50"S 29° 5'49.69"E	20.00	34	0.08	155	0.39	2.90	18	77.00	68.00	7.20	524,330
		12.00	27	0.10	175	3.90	2.10	11	290.00	66.00	7.20	510,040
		17.00	31	0.26	260	<0.10	2.20	30	85.00	70.00	7.10	2,548,500
		13.00	26	0.18	210	<0.10	2.30	48	465.00	58.00	6.90	1,732,900
S-QWAQWA	Qwa-Qwa Sewage Works 28°30'29.90"S 28°49'34.21"E	1.90	33	0.12	67	18.00	3.10	29	18.00	41.00	5.80	88
		11.00	37	0.17	16	12.00	3.50	34	34.00	39.00	6.50	21
		0.65	30	0.10	45	10.00	2.10	53	28.00	46.00	6.70	325
		0.25	22	0.08	67	12.00	1.60	23	22.00	38.00	7.10	1,380
S-TSIAME	Tsiame Sewage Works 28°16'47.10"S 28°59'20.70"E	2.90	47	0.08	73	0.94	1.80	33	24.00	43.00	7.40	2,040
		28.00	34	0.10	250	0.21	4.10	24	93.00	65.00	7.30	244,710
		21.00	32	0.15	170	0.31	3.70	75	77.00	59.00	7.30	67,790
		14.00	26	0.22	165	1.30	1.60	22	39.00	52.00	7.30	38,960

Key	WLA	0.12	-	1 Apr 13 - 30 Jun 13
		0.12	-	1 July 13 - 30 Sept 13
		0.12	-	1 Oct 13 - 31 Dec 13
		0.12	-	1 Jan 14 - 31 Mar 14

Water Quality Guidelines	-
	Ideal
	Acceptable
	Tolerable
	Unacceptable
	No sample or result available

Sewage Works Compliance to General Standard (GN 1191 Oct 1999)			
Variables	Measured as	Acceptable Management Level	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/100m	<1000	>=1000
** After removal of algae			