



Water Quality Status of the Vaal Dam Catchment: February 2010 to March 2010

Sample Point	Sample Point Description	Conductivity (mS/m)	Chloride (mg/l)	Fluoride (mg/l)	Ammonia Nitrogen (mg/l)	Nitrate and Nitrite (mg/l)	Orthophosphate (mg/l)	pH	Sulphate (mg/l)	Chemical Oxygen Demand (mg/l)	Faecal Coliforms (counts/100ml)	Escherichia Coli (counts/100ml)
1	Vaal River @ Villiers	16	9	0.1	1	<0.1	0.2	7.4	47.0	48	1800	1800
		17	9	0.2	0.1	<0.1	0.1	7.7	39.0	14	23	4
2	C2H122Q01 Vaal Dam on Vaal River	19	11	0.1	0.8	0.4	0.1	7.4	28.0	21	9	9
		18	10	0.2	0.1	0.2	0.1	7.6	36.0	10	70	10
3	Delangesdrift Bridge	15	8	0.1	0.6	<0.1	0.1	7.7	31.0	32	6900	6700
		23	9	0.2	<0.1	0.2	0.1	7.7	19.0	13	230	230
4	Vaal River downstream of Standerton	15	12	0.1	0.8	<0.1	0.1	7.7	31.0	47	45	40
		23	9	0.2	<0.1	<0.1	0.1	7.8	22.0	<10	90	60
GENERAL STANDARDS												
5	Standerton Sewage Works Final Effluent	70	47	0.2	21	0.3	4.6	7.2	46.0	107	700000	600000
		71	49	0.2	24.6	0.2	5.6	7.0	39.0	289	2300000	1900000
6	Vrede Sewage Works	78	74	0.2	13	5.0	4.7	7.9	47.0	47	8	8
		70	69	0.2	1.2	7.9	3.1	7.6	52.0	19	32	32
7	Cornelia Sewage Works	95	72	0.3	0.8	13.5	5.8	7.5	109.0	30	46	42
		74	67	0.2	0.2	14.7	8.9	7.4	53.0	21	470	470
8	Villiers Sewage Works	84	98	0.2	10.3	10.5	4.5	7.4	69.0	66	720	630
		91	103	0.2	22.5	0.3	5.0	7.3	33.0	101	56000	56000
9	Volkruist Sewage Works	36	22	0.1	2	1.1	1.1	7.5	62.0	26	25	25
		36	23	0.2	0.2	1.9	1.3	7.8	49.0	16	7	5
10	Vukuzakhe Sewage Works	68	54	0.1	6	21.8	3.7	7.6	115.0	39	720	650
		71	57	0.2	15.4	20.1	5.0	7.6	60.0	18	32	7
11	Orangeville Sewage Works	82	83	0.1	5.8	9.7	4.1	7.6	85.0	44	58000	58000
		53	52	0.2	0.8	20.2	3.2	7.9	38.0	39	21	8
12	Deneysville Sewage Works	81	78	0.1	1	11.2	3.2	7.4	113.0	53	430	350
		70	64	0.2	0.5	26.1	3.4	7.5	65	23	2900	2900

Water Quality Guidelines

Blue	Ideal
Green	Acceptable
Yellow	Tolerable
Red	Unacceptable

In-stream Water Quality Guidelines for Vaal Dam Catchment

Variables	Measured as	Catchment Background	Management Target	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
Chloride (Cl)	mg/l	< 25	25 - 50	50 - 75	> 75
Fluoride (F)	mg/l	< 0.05	0.05 - 0.20	0.2 - 0.4	> 0.4
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 (PC)	mg/l	< 0.05	0.05 - 0.25	0.25 - 0.50	> 0.5
Sulphate (SO ₄)	mg/l	< 20	20 - 45	45 - 70	> 70
Bacteriological					
Faecal coliform	counts/100ml	< 10	10 - 60	60 - 120	> 120