

Regional Rivers Water Quality Monitoring Programme: Data Report 2007

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1 Introduction

1.1 Background

To effectively manage water quality, the Regional River monitoring programme addresses the following questions:

1. What is the quality of the water now?
2. Why is the water of the observed level of quality?
3. Is water quality getting better or worse? If so - what makes it change?
4. How can we improve the quality, ecological health and integrity of the Region's rivers and streams?

The monitoring information allows Environment Waikato to:

- Determine compliance with classification standards.
- Assess the suitability of the resource for various beneficial uses and values of the water.
- Monitor the impact of major discrete point source discharges on water quality.
- Monitor the impacts of diffuse discharges on water quality.
- Provide a basis for evaluating the effectiveness of resource management measures.

This dataset is invaluable for the evaluation of the Region's rivers: their state, the pressures on them and our response to these pressures. We need to continue to gather comprehensive, reliable and good quality data on the Region's rivers to protect and enhance their values into the future.

This report is the 13th since the implementation of the Regional Rivers Monitoring Programme (RERIMP) in 1993¹ and follows the format of the previous data report (Beard, 2007). Copies of reports as described in the list of references (page 30) can be obtained by contacting Environment Waikato (the Library) on 0800 800 401, or in electronic format from the publications page of the Environment Waikato website: www.ew.govt.nz/publications or email: inforeq@ew.govt.nz

1.2 Report Content

The report provides information on the routine monthly monitoring of water quality at 100 locations across the Waikato Region, and includes:

- Year 2007 summary statistics tabulated by parameter and reported together.
- Year 2007 summary statistics for the major ions, tabulated by parameter.
- Spatial contour plots for four water quality parameters using spatial interpolation of the median of the previous 5 years.
- Summary tables identifying the number of samples meeting 'Satisfactory' and 'Excellent' water quality guidelines and standards.

1.3 Water Quality Guidelines and Standards

Table 1 lists the physical, chemical (physico-chemical) and microbiological water quality guidelines and standards used to assess the condition of the Region's rivers in 2007. The standards relate to either the protection of the ecological health of rivers and streams or to the suitability for direct-contact water-based recreation (e.g. swimming).

¹ Waikato River reported on separately — see Beard, 2007 (in prep).

Table 1: Guidelines and Standards for Physico-chemical Water Quality for Ecological Health and for Human Uses of Water.

See Appendix I for a description of the Guidelines and Standards used.

Water Quality Measure	Relevance ¹	Satisfactory	Excellent
Ecological Health			
Dissolved oxygen (% of saturation)	aquatic life (breathing)	>80	>90
pH	aquatic life (acidity)	6.5–9	7–8
Turbidity (NTU)	plant growth (clarity)	<5	<2
Ammoniacal-N (g N/m ³)	aquatic life (toxicity)	<0.88	<0.1
Temperature (°C) (May-Sep)	fish (spawning)	<12	<10
(Oct-Apr)		<20	<16
Total phosphorus (g/m ³)	nuisance plant growth	<0.04	<0.01
Total nitrogen (g/m ³)	nuisance plant growth	<0.5	<0.1
Human Uses—recreation			
Baseflow water clarity (m)	visibility	>1.6	>4
<i>Escherichia coli</i> (no./100 mL)	human health	<550	<55
Median <i>E. coli</i> (no./100 mL)	human health	<126	<23

¹ Refer to Appendix II for further information. These guidelines and standards are also described on the Environment Waikato Internet site; www.ew.govt.nz

In each case two values are shown. The less stringent values define water that is “satisfactory” for the desired use; these are mostly based on existing national and other Guidelines and Standards (Appendix I). The more stringent values identify “excellent” water, and reflect expert opinion.

2 Regional Rivers Monitoring Design

2.1 Sampling Locations

Routine water quality monitoring locations of the Regional Rivers monitoring programme are summarised in *Table 2* and illustrated in *Figure 1*. One hundred were sampled regularly by Environment Waikato. A further 5 locations form part of N.I.W.A.’s National Water Quality Network, whose data are reported annually.

Table 2: Environment Waikato's Sampling Locations

Map No.	Location	Location Id	Map Ref.
Coromandel			
91	Hikutaia River @ Old Maratoto Rd	169.2	T12:471-312
92	Kauaeranga River @ Smiths Cableway/Recorder	234.11	T12:404-461
99	Ohinemuri River @ Queens Head	619.19	T13:576-170
98	Ohinemuri River @ SH25 Bridge	619.20	T13:641-213
96	Tairua River @ Morrisons Bridge Hikuia	940.10	T12:567-548
93	Tapu River @ Tapu-Coroglen Rd	954.5	T11:332-658
94	Waiau River @ E309 Rd Ford	1105.3	T11:357-866
100	Waitekauri River @ U/S Ohinemuri Confluence	1239.32	T13:566-168
95	Waiwawa River @ SH25 Coroglen	1257.3	T11:503-717
97	Wharekawa River @ SH25	1312.3	T12:628-478
Hauraki			
32	Mangawhero Stm (Kaihere) @ Mangawara Rd	489.2	S13:249-195
35	Oraka Stm @ Lake Rd	669.6	T15:536-607
83	Piako River @ Kiwitahi	749.10	T14:398-856
79	Piako River @ Paeroa-Tahuna Rd Bridge	749.15	T13:318-068
82	Piakonui Stm @ Piakonui Rd	753.4	T14:417-719
33	Waihou River @ Okauia	1122.18	T14:602-756
37	Waihou River @ Whites Rd	1122.41	T15:572-500
36	Waiohotu Stm @ Waiohotu Rd (Off SH5)	1173.2	T15:665-513
34	Waiomou Stm @ Matamata-Tauranga Rd	1174.4	T15:623-683
31	Waitakaruru River (Hauraki Plains) @ Coxhead Rd Bridge	1230.1	S12:194-339
81	Waitoa River @ Landsdowne Rd Bridge	1249.15	T14:517-783
80	Waitoa River @ Mellon Rd Recorder	1249.18	T13:426-047
Tributaries to the lower Waikato River			
27	Awaroa River (Waiuku) @ Otaua Rd Bridge opp Moseley Rd	41.9	R12:662-319
7	Awaroa Stm (Rotowaro) @ Sansons Bridge-Rotowaro-Huntly	39.11	S14:948-997
85	Karapiro Stm @ Hickey Rd Bridge	230.5	T15:331-639
90	Kirikiroa Stm @ Tauhara Drive	253.4	S14:095-817
6	Komakorau Stm @ Henry Rd	258.4	S14:091-949
38	Little Waipa Stm @ Arapuni – Putaruru Rd	335.1	T15:489-462
87	Mangakotukutuku Stm (Rukuhia) @ Peacock Rd	398.1	S14:127-743
40	Mangamingi Stm (Tokoroa) @ Paraonui Rd Bridge	407.1	T16:588-302
77	Mangaone Stm @ Annebrooke Rd Bridge	417.7	S14:159-744
78	Mangaonua Stm @ Hoeka Rd	421.10	S14:205-776
84	Mangaonua Stm @ Te Miro Rd	421.16	T14:314-731
30	Mangatangi River @ SH2 Maramarua	453.6	S12:042-372
29	Mangatawhiri River @ Lyons Rd at Buckingham Bridge	459.6	S12:997-427
19	Mangawara Stm @ Rutherford Rd Bridge	481.7	S13:084-023
86	Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	488.1	S15:217-653
20	Matahuru Stm @ Waiterimu Rd Br	516.5	S13:083-109
25	Ohaeroa Stm @ SH22 Bridge	612.9	R12:834-303
24	Opuatia Stm @ Ponganui Rd	665.5	R13:773-245
39	Pokaiwhenua Stm @ Arapuni-Putaruru Rd	786.2	T15:491-458
21	Waerenga Stm @ Taniwha Rd	1098.1	S13:131-217
89	Waitawhiriwhiri Stm @ Edgecumbe Street	1236.2	S14:102-787
26	Whakapipi Stm @ SH22 Bridge	1282.8	R12:812-365
41	Whakauru Stm @ U/S SH1 Bridge	1287.7	T16:614-282
28	Whangamarino River @ Island Block Rd	1293.7	S12:954-308
22	Whangamarino River @ Jefferies Rd Bridge	1293.9	S13:084-273
23	Whangape Stm @ Rangiriri-Glen Murray Rd	1302.1	S13:950-154

Map No.	Location	Location Id	Map Ref.
Waipa River and Tributaries			
11	Kaniwhaniwha Stm @ Wright Rd	222.16	S15:985-680
74	Mangaohoi Stm @ South Branch Maru Rd	411.9	T15:329-471
65	Mangaokewa Stm @ Te Kuiti Borough Water Supply Intake	414.12	S16:998-161
76	Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	438.3	S15:093-560
63	Mangapu River @ Otorohanga	443.3	S16:033-318
73	Mangatutu Stm (Waikeria) @ Walker Rd Bridge	476.7	S15:203-422
13	Mangauika Stm @ Te Awamutu Borough Water Supply Intake	477.10	S15:980-504
88	Ohote Stm @ Whatawhata/Horotiu Rd	624.5	S14:997-794
75	Puniu River @ Bartons Corner Rd Bridge	818.2	S15:115-500
61	Waipa River @ Mangaokewa Rd	1191.5	S17:233-028
12	Waipa River @ Pirongia-Ngutunui Rd Bridge	1191.10	S15:037-529
64	Waipa River @ SH3 Otorohanga	1191.12	S16:036-322
18	Waitomo Stm @ SH31 Otorohanga	1253.5	S16:022-335
17	Waitomo Stm @ Tumutumu Rd	1253.7	S16:938-249
Tributaries to the upper Waikato River			
48	Kawaunui Stm @ SH5 Bridge	240.5	U17:021-081
43	Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	359.1	U16:733-129
49	Mangakara Stm (Reporoa) @ SH5	380.2	U17:996-003
60	Mangakino River (Whakamaru) @ Sandel Rd	388.1	T17:486-013
46	Otamakokore Stm @ Hossack Rd	683.4	U16:955-166
52	Pueto Stm @ Broadlands Rd Bridge	802.1	U17:938-827
44	Tahunaatara Stm @ Ohakuri Rd	934.1	U16:785-138
51	Torepatutahi Stm @ Vaile Rd Bridge	1057.6	U17:985-965
47	Waiotapu Stm @ Campbell Rd Bridge	1186.2	U17:024-082
50	Waiotapu Stm @ Homestead Rd Bridge	1186.4	U17:003-000
42	Waipapa Stm (Mokai) @ Tirohanga Rd Bridge	1202.7	T17:685-047
45	Whirinaki Stm @ Corbett Rd	1323.1	U16:957-171
West Coast			
70	Awakino River @ Gribbon Rd	33.6	R17:702-918
69	Awakino River @ SH3 Awakau Rd Junction	33.9	R18:588-799
67	Manganui River @ Off Manganui Rd	410.4	R17:554-831
66	Mangaotaki River @ SH3 Bridge	428.3	R17:764-963
15	Marokopa River @ Speedies Rd (Off Te Anga Rd)	513.3	R16:708-256
68	Mokau River @ Awakau Rd	556.2	R18:601-785
62	Mokau River @ Mangaokewa Rd (Off SH30)	556.5	S17:096-017
71	Mokau River @ Totoro Rd Recorder	556.9	R17:759-907
72	Mokauiti Stm @ Three Way Point – Aria	557.5	R17:828-929
9	Ohautira River @ Waingaro - Te Uku Rd	616.1	R14:842-803
14	Oparau River @ Langdon Rd (Off Okupata Rd)	658.1	R15:799-494
16	Tawarau River @ Off Speedies Rd	976.1	R16:718-249
8	Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	1167.4	R14:837-837
10	Waitetuna River @ Te Uku-Waingaro Rd	1247.2	R14:842-742
Inflows to Lake Taupo			
55	Hinemaiaia River @ SH1	171.5	U18:722-567
101	Kuratau River @ Te Rae Street	282.5	T18:502-536
58	Kuratau River @ SH41 Moerangi	282.4	T18:356-537
53	Mapara Stm @ Off Mapara Rd (Whakaipo Reserve)	504.2	T18:681-750
56	Tauranga-Taupo River @ Te Kono Slackline	971.4	T19:636-473
105	Tokaanu Power Station Tailrace Canal @ SH41 Bridge	1491.1	T19:504-435
57	Tokaanu Stm @ Off SH41 Turangi	1045.3	T19:517-423
59	Waihaha River @ SH32	1106.4	T18:434-747
54	Waitahanui River @ Blake Rd	1226.1	U18:781-627
104	Whanganui Stream @ Lakeside Lake Taupo	1301.1	T18:473-653
102	Whareroa Stream @ Lakeside Lake Taupo	1318.4	T18:515-568
103	Whareroa Stream @ Whareroa Station Bridge	1318.3	T18:483-583

2.2 Sample Collection

Sample collection occurs monthly. The 100 locations sampled by Environment Waikato staff are divided between 7 sampling runs. The runs are sampled in the same order each month, and by the same group of field staff. Sampling is assigned to either the second, third or fourth week of each month. A similar time of sampling (± 1 hour) is maintained for subsequent visits to a location to minimise the effect of any diurnal variation on water quality parameters, thereby increasing long term trend detection power.

2.3 Water Quality Parameters

Water quality of the Region's rivers is assessed by measuring up to 32 parameters (16 routinely). Seventy-four locations are measured quarterly for enterococci and *E.coli* bacteria. Some parameters are measured in the field, but most are analysed by laboratories using standard analytical methods. Details of field measurements and analytical methods are given in *Appendix II*.

2.4 Quality Control, Data Storage and Analysis

Quality control measures are undertaken in accordance with Environment Waikato's ISO 9001:2000 standards including procedures for the collection, transport and storage of samples, and methods for data verification and quality assurance to ensure the consistency of data across the programme. Samples are sent to IANZ registered laboratories for analysis. Back-up samples are held for two months until results have been verified by routine quality assurance procedures. All data from field measurements and laboratory analyses are stored in Environment Waikato's water quality archiving database (HYDSTRA).

Data analysis was performed using Data Desk (version 6.0.1). For the purpose of data analysis, non-detect results (i.e. results with "less than" values) were assumed to be equal to half the corresponding limit of detection (i.e. $<x = x/2$), and results greater than the value reported were taken as equal to the value reported (i.e. $>x = x$).

The water quality spatial contour plots were created using Surfer (version 8). To present the spatial contour plots the kriging spatial interpolation procedure was used to estimate the variable at unsampled locations, using weighted sums of the variable at neighbouring sample points. The procedure is designed to minimize the variance of the estimation errors. In some cases artificial sites were used at points downstream of lowland sample sites to show a catchment flow-through effect.

2.5 Reports

A report on Regional Water Quality Trends (Vant & Smith, 2004) summarises the trends and patterns in regional water quality during 1990 to 2002. Environment Waikato's State of the Environment Report briefly summarises the state of the rivers in the region, and common pressures (Environment Waikato, 1999).

The data contained in these Regional Rivers reports is updated to the Environment Waikato "Healthy Rivers" Internet page:

www.ew.govt.nz/enviroinfo/water/healthyivers/index.htm

This page also provides a link to details of the water quality guidelines and standards used to assess the condition of the Regions rivers, as well as other information relating to Lakes, Rivers and Wetlands.

3 Results

The results are divided into 2 sections. Section 3.1 has a statistical summary of routine monitoring of the Region's rivers in 2007 and provides the spatial contour plots using water quality data from four parameters, based on median values for the last 5 years. Section 3.2 compares the results with water quality guidelines and standards for compliance.

3.1 Regional Rivers Monitoring Programme Summary Statistics

Absorbance of filtered sample at 340 nm (units: cm⁻¹)

Location	03-07							Median
	Count	Mean	Median	Min	Max	IQR	Skew	
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	0.017	0.017	0.009	0.026	0.007	0.29	0.017
Kauaeranga River @ Smiths Cableway/Recorder	12	0.035	0.023	0.006	0.116	0.022	1.56	0.017
Ohinemuri River @ Queens Head	12	0.019	0.019	0.008	0.033	0.013	0.32	0.017
Ohinemuri River @ SH25 Br	12	0.017	0.012	0.008	0.047	0.010	<u>1.75</u>	0.012
Tairua River @ Morrisons Br Hikuai	12	0.025	0.022	0.010	0.061	0.018	1.17	0.018
Tapu River @ Tapu-Coroglen Rd	12	0.023	0.010	0.003	0.124	0.015	<u>2.47</u>	0.011
Waiau River @ E309 Rd Ford	12	0.029	0.016	0.010	0.127	0.019	<u>2.31</u>	0.016
Waitekauri River @ U/S Ohinemuri Conflu	12	0.014	0.012	0.007	0.026	0.010	0.70	0.013
Waiwawa River @ SH25 Coroglen	12	0.050	0.043	0.012	0.146	0.038	1.29	0.024
Wharekawa River @ SH25	12	0.020	0.017	0.008	0.042	0.017	0.78	0.019

Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.025	0.022	0.016	0.040	0.006	1.16	0.022
Oraka Stm @ Lake Rd	12	0.013	0.013	0.008	0.019	0.003	0.71	0.013
Piako River @ Kiwitahi	12	0.057	0.054	0.037	0.099	0.020	1.27	0.050
Piako River @ Paeroa-Tahuna Rd Br	4	0.076	0.072	0.066	0.096	0.017	1.00	0.073
Piakonui Stm @ Piakonui Rd	12	0.035	0.031	0.022	0.081	0.009	<u>2.15</u>	0.031
Waihou River @ Okauia	12	0.012	0.013	0.008	0.018	0.004	0.39	0.013
Waihou River @ Whites Rd	12	0.002	0.001	0.001	0.004	0.000	<u>1.79</u>	0.001
Waihohu Stm @ Waihohu Rd (Off SH5)	12	0.028	0.028	0.009	0.037	0.006	-1.43	0.031
Waiomou Stm @ Matamata-Tauranga Rd	12	0.016	0.016	0.013	0.019	0.003	0.23	0.017
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.072	0.072	0.036	0.102	0.025	-0.24	0.064
Waitoa River @ Landsdowne Rd Br	12	0.049	0.048	0.034	0.062	0.018	-0.08	0.047
Waitoa River @ Mellon Rd Recorder	12	0.045	0.043	0.037	0.063	0.009	1.34	0.045

Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	0.044	0.040	0.024	0.069	0.014	0.84	0.042
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.029	0.029	0.015	0.047	0.010	0.29	0.026
Karapiro Stm @ Hickey Rd Bridge	12	0.056	0.053	0.037	0.105	0.017	1.52	0.053
Kirikiri Stm @ Tauhara Dr	12	0.058	0.058	0.036	0.081	0.010	-0.08	0.057
Komakorau Stm @ Henry Rd	12	0.113	0.110	0.063	0.253	0.035	<u>1.79</u>	0.099
Little Waipa Stm @ Arapuni - Putaruru Rd	12	0.011	0.011	0.003	0.021	0.005	0.69	0.012
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	0.235	0.225	0.074	0.420	0.190	0.18	0.252
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	0.029	0.028	0.024	0.040	0.006	1.33	0.027
Mangaone Stm @ Annebrooke Rd Br	12	0.053	0.050	0.040	0.089	0.009	<u>1.91</u>	0.052
Mangaonua Stm @ Hoeka Rd	12	0.043	0.041	0.027	0.080	0.019	1.31	0.042
Mangaonua Stm @ Te Miro Rd	12	0.034	0.032	0.023	0.057	0.010	1.39	0.030
Mangatangi River @ SH2 Maramarua	12	0.062	0.061	0.035	0.098	0.030	0.34	0.054
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.034	0.031	0.015	0.059	0.020	0.46	0.024
Mangawara Stm @ Rutherford Rd Br	12	0.120	0.110	0.086	0.157	0.030	0.42	0.114
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.118	0.086	0.056	0.283	0.061	1.51	0.110
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.083	0.083	0.061	0.110	0.015	0.29	0.073
Ohaeroa Stm @ SH22 Br	12	0.034	0.027	0.019	0.091	0.014	<u>2.28</u>	0.025
Opuatia Stm @ Ponganui Rd	12	0.036	0.035	0.020	0.067	0.018	0.86	0.029
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	0.015	0.014	0.008	0.028	0.004	1.31	0.015
Waerenga Stm @ Taniwha Rd	12	0.032	0.032	0.017	0.047	0.011	-0.04	0.030
Waitawhirihiri Stm @ Edgecumbe Street	12	0.142	0.130	0.089	0.241	0.060	0.89	0.139
Whakapipi Stm @ SH22 Br	12	0.043	0.038	0.026	0.090	0.012	<u>1.93</u>	0.039
Whakauru Stm @ U/S SH1 Br	12	0.024	0.025	0.016	0.030	0.007	-0.57	0.026
Whangamarino River @ Island Block Rd	12	0.127	0.127	0.050	0.180	0.047	-0.36	0.120
Whangamarino River @ Jefferies Rd Br	12	0.053	0.051	0.027	0.097	0.010	1.36	0.049
Whangape Stm @ Rangiriri-Glen Murray Rd	12	0.069	0.065	0.041	0.095	0.020	0.00	0.063

Absorbance of filtered sample at 440 nm (units: cm⁻¹)

Location	03-07							Median
	Count	Mean	Median	Min	Max	IQR	Skew	
Hikutaia River @ Old Maratoto Rd	12	0.003	0.003	0.001	0.006	0.004	0.25	0.004
Kauaeranga River @ Smiths Cableway/Recorder	12	0.006	0.005	0.001	0.023	0.006	1.51	0.003
Ohinemuri River @ Queens Head	12	0.003	0.003	0.001	0.008	0.004	0.64	0.003
Ohinemuri River @ SH25 Br	12	0.003	0.003	0.001	0.012	0.004	<u>1.72</u>	0.003
Tairua River @ Morrisons Br Hikuai	12	0.005	0.005	0.001	0.013	0.005	0.92	0.004
Tapu River @ Tapu-Coroglen Rd	12	0.005	0.001	0.001	0.029	0.004	<u>2.52</u>	0.002
Waiau River @ E309 Rd Ford	12	0.006	0.003	0.001	0.032	0.006	<u>2.43</u>	0.003
Waitekauri River @ U/S Ohinemuri Conflu	12	0.003	0.003	0.001	0.008	0.003	1.28	0.003
Waiwawa River @ SH25 Coroglen	12	0.010	0.009	0.001	0.030	0.008	1.26	0.006
Wharekawa River @ SH25	12	0.004	0.004	0.001	0.010	0.006	0.55	0.004

Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.005	0.005	0.003	0.008	0.002	0.17	0.005
Oraka Stm @ Lake Rd	12	0.003	0.003	0.001	0.004	0.001	-0.12	0.003
Piako River @ Kiwitahi	12	0.011	0.010	0.007	0.020	0.005	1.24	0.009
Piako River @ Paeroa-Tahuna Rd Br	4	0.014	0.014	0.010	0.020	0.007	0.48	0.013
Piakonui Stm @ Piakonui Rd	12	0.007	0.006	0.004	0.017	0.003	<u>1.81</u>	0.006
Waihou River @ Okauia	12	0.002	0.002	0.001	0.004	0.001	0.24	0.003
Waihou River @ Whites Rd	12	0.001	0.001	0.001	0.001	0.000	-1.00	0.001
Waihohu Stm @ Waihohu Rd (Off SH5)	12	0.006	0.006	0.001	0.008	0.002	-1.20	0.007
Waiomou Stm @ Matamata-Tauranga Rd	12	0.003	0.003	0.002	0.005	0.001	0.58	0.004
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.013	0.014	0.005	0.019	0.003	-0.76	0.012
Waitoa River @ Landsdowne Rd Br	12	0.009	0.009	0.006	0.013	0.004	0.42	0.008
Waitoa River @ Mellon Rd Recorder	12	0.008	0.008	0.007	0.011	0.003	0.82	0.008

Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	0.008	0.007	0.003	0.013	0.003	0.79	0.007
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.005	0.005	0.001	0.008	0.003	-0.20	0.004
Karapiro Stm @ Hickey Rd Bridge	12	0.010	0.009	0.005	0.021	0.004	1.32	0.009
Kirikiri Stm @ Tauhara Dr	12	0.009	0.009	0.005	0.013	0.003	-0.05	0.009
Komakorau Stm @ Henry Rd	12	0.017	0.017	0.008	0.036	0.008	1.21	0.015
Little Waipa Stm @ Arapuni - Putaruru Rd	12	0.002	0.002	0.001	0.004	0.002	0.27	0.003
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	0.041	0.043	0.012	0.070	0.032	-0.03	0.045
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	0.007	0.007	0.005	0.010	0.002	0.91	0.006
Mangaone Stm @ Annebrooke Rd Br	12	0.010	0.008	0.007	0.017	0.003	<u>1.79</u>	0.009
Mangaonua Stm @ Hoeka Rd	12	0.008	0.007	0.003	0.016	0.004	1.24	0.007
Mangaonua Stm @ Te Miro Rd	12	0.006	0.006	0.004	0.011	0.002	1.09	0.006
Mangatangi River @ SH2 Maramarua	12	0.011	0.011	0.006	0.020	0.006	0.70	0.010
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.007	0.006	0.001	0.012	0.005	0.01	0.005
Mangawara Stm @ Rutherford Rd Br	12	0.020	0.019	0.013	0.024	0.006	-0.25	0.019
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.020	0.016	0.009	0.044	0.010	1.40	0.018
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.014	0.014	0.010	0.020	0.003	0.46	0.013
Ohaeroa Stm @ SH22 Br	12	0.006	0.005	0.003	0.019	0.003	<u>2.32</u>	0.005
Opuatia Stm @ Ponganui Rd	12	0.006	0.006	0.003	0.012	0.005	0.63	0.005
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	0.003	0.003	0.001	0.005	0.001	-0.12	0.003
Waerenga Stm @ Taniwha Rd	12	0.006	0.006	0.002	0.010	0.002	-0.06	0.006
Waitawhirihiri Stm @ Edgecumbe Street	12	0.023	0.021	0.014	0.041	0.011	0.91	0.022
Whakapipi Stm @ SH22 Br	12	0.008	0.007	0.004	0.019	0.003	<u>2.13</u>	0.007
Whakauru Stm @ U/S SH1 Br	12	0.005	0.005	0.003	0.006	0.001	-0.38	0.005
Whangamarino River @ Island Block Rd	12	0.023	0.024	0.010	0.032	0.009	-0.47	0.022
Whangamarino River @ Jefferies Rd Br	12	0.010	0.009	0.004	0.017	0.001	0.72	0.009
Whangape Stm @ Rangiriri-Glen Murray Rd	12	0.011	0.010	0.007	0.017	0.004	0.55	0.010

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Waipa River and Tributaries								
Kaniwhaniwha Stm @ Wright Rd	12	0.030	0.029	0.016	0.045	0.012	0.00	0.031
Mangaohoi Stm @ South Branch Maru Rd	12	0.010	0.009	0.007	0.019	0.005	1.47	0.009
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	0.036	0.036	0.019	0.058	0.016	0.40	0.034
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	0.079	0.073	0.056	0.121	0.022	0.96	0.077
Mangapu River @ Otorohanga	12	0.030	0.029	0.017	0.054	0.011	1.01	0.027
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	0.020	0.018	0.014	0.036	0.007	1.28	0.022
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	0.008	0.007	0.001	0.022	0.006	1.43	0.007
Ohote Stm @ Whatawhata/Horotiu Rd	12	0.163	0.161	0.105	0.260	0.059	0.68	0.155
Puniu River @ Bartons Corner Rd Br	12	0.029	0.029	0.025	0.035	0.005	0.51	0.030
Waipa River @ Mangaokewa Rd	12	0.042	0.039	0.030	0.063	0.014	0.80	0.042
Waipa River @ Pirongia-Ngutunui Rd Br	12	0.030	0.030	0.018	0.040	0.013	-0.14	0.029
Waipa River @ SH3 Otorohanga	12	0.025	0.026	0.014	0.042	0.011	0.60	0.025
Waitomo Stm @ SH31 Otorohanga	12	0.023	0.021	0.012	0.038	0.013	0.46	0.019
Waitomo Stm @ Tumutumu Rd	12	0.015	0.013	0.007	0.034	0.009	1.29	0.012

	12	0.005	0.006	0.001	0.009	0.003	-0.40	0.006
	12	0.002	0.001	0.001	0.006	0.002	1.61	0.002
	12	0.007	0.006	0.001	0.012	0.005	-0.03	0.007
	12	0.014	0.013	0.009	0.020	0.005	0.62	0.014
	12	0.005	0.005	0.001	0.011	0.004	0.46	0.005
	12	0.004	0.004	0.002	0.007	0.002	0.80	0.004
	12	0.002	0.001	0.001	0.005	0.001	1.89	0.001
	12	0.027	0.026	0.015	0.046	0.010	0.79	0.025
	12	0.006	0.006	0.005	0.007	0.001	0.63	0.006
	12	0.008	0.007	0.005	0.012	0.003	0.80	0.008
	12	0.006	0.006	0.002	0.010	0.003	-0.01	0.006
	12	0.004	0.004	0.001	0.009	0.003	0.22	0.005
	12	0.004	0.004	0.001	0.007	0.003	-0.19	0.004
	12	0.003	0.003	0.001	0.007	0.003	0.86	0.002

Tributaries to the upper Waikato River								
Kawaunui Stm @ SH5 Br	12	0.027	0.029	0.015	0.036	0.010	-0.43	0.030
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	0.025	0.025	0.017	0.032	0.007	-0.07	0.029
Mangakara Stm (Reporoa) @ SH5	12	0.016	0.016	0.012	0.021	0.003	0.13	0.018
Mangakino Stm (Whakamaru) @ Sandel Rd	12	0.011	0.012	0.006	0.018	0.005	0.28	0.014
Otamakokore Stm @ Hossack Rd	12	0.027	0.025	0.017	0.044	0.011	0.77	0.030
Pueto Stm @ Broadlands Rd Br	12	0.011	0.010	0.009	0.014	0.002	0.84	0.011
Tahunaatara Stm @ Ohakuri Rd	12	0.029	0.027	0.018	0.039	0.012	0.13	0.031
Torepatutahi Stm @ Vaile Rd Br	12	0.012	0.011	0.007	0.019	0.006	0.77	0.012
Waiotapu Stm @ Campbell Rd Br	12	0.006	0.006	0.003	0.009	0.002	0.27	0.006
Waiotapu Stm @ Homestead Rd Br	12	0.023	0.023	0.009	0.035	0.005	-0.17	0.024
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	0.013	0.012	0.010	0.018	0.002	1.20	0.015
Whirinaki Stm @ Corbett Rd	12	0.003	0.002	0.001	0.006	0.003	0.66	0.004

	12	0.006	0.007	0.003	0.009	0.003	-0.31	0.006
	12	0.005	0.005	0.003	0.007	0.002	0.46	0.005
	12	0.003	0.004	0.001	0.004	0.002	-0.86	0.004
	12	0.002	0.002	0.001	0.005	0.002	0.69	0.003
	12	0.006	0.006	0.003	0.010	0.002	0.52	0.007
	12	0.002	0.001	0.001	0.003	0.001	0.93	0.001
	12	0.006	0.005	0.002	0.007	0.002	-0.74	0.007
	12	0.002	0.001	0.001	0.004	0.002	1.00	0.002
	12	0.001	0.001	0.001	0.001	0.000	-1.00	0.001
	12	0.004	0.004	0.001	0.006	0.002	-0.28	0.004
	12	0.002	0.002	0.001	0.004	0.002	0.45	0.003
	12	0.001	0.001	0.001	0.003	0.000	3.02	0.001

West Coast								
Awakino River @ Gribbon Rd	12	0.005	0.006	0.003	0.009	0.003	0.23	0.007
Awakino River @ SH3 Awakau Rd Junction	12	0.012	0.011	0.002	0.026	0.010	0.53	0.013
Manganui River @ Off Manganui Rd	12	0.007	0.007	0.001	0.013	0.004	0.05	0.009
Mangaotaki River @ SH3 Br	12	0.016	0.015	0.007	0.037	0.008	1.69	0.015
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	0.023	0.019	0.010	0.046	0.015	0.94	0.018
Mokau River @ Awakau Rd	12	0.034	0.035	0.017	0.049	0.017	-0.23	0.035
Mokau River @ Mangaokewa Rd (Off SH30)	12	0.045	0.047	0.026	0.079	0.020	0.70	0.043
Mokau River @ Totoro Rd Recorder	12	0.033	0.032	0.017	0.070	0.014	1.41	0.029
Mokauti Stm @ Three Way Point - Aria	12	0.066	0.060	0.027	0.150	0.047	1.01	0.051
Ohautira Stm @ Waingaro Te Uku Rd	12	0.025	0.023	0.012	0.042	0.010	0.67	0.021
Oparau River @ Langdon Rd (Off Okupata Rd)	12	0.024	0.018	0.010	0.055	0.021	0.89	0.019
Tawarau River @ Off Speedies Rd	12	0.020	0.017	0.009	0.043	0.009	1.56	0.017
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	0.040	0.041	0.018	0.069	0.020	0.29	0.039
Waitetuna River @ Te Uku-Waingaro Rd	12	0.025	0.024	0.012	0.038	0.011	-0.06	0.026

	12	0.001	0.001	0.001	0.001	0.000	-1.00	0.001
	12	0.002	0.002	0.001	0.005	0.002	0.73	0.003
	12	0.001	0.001	0.001	0.002	0.000	1.79	0.001
	12	0.003	0.003	0.001	0.005	0.003	0.44	0.003
	12	0.004	0.004	0.001	0.010	0.004	0.68	0.004
	12	0.006	0.007	0.001	0.008	0.004	-0.62	0.007
	12	0.008	0.009	0.004	0.015	0.005	0.40	0.008
	12	0.006	0.006	0.002	0.014	0.004	1.27	0.005
	12	0.012	0.011	0.005	0.028	0.009	1.07	0.009
	12	0.005	0.005	0.001	0.008	0.002	-0.24	0.004
	12	0.005	0.004	0.001	0.012	0.005	0.72	0.004
	12	0.004	0.003	0.001	0.008	0.003	0.68	0.003
	12	0.007	0.008	0.003	0.012	0.005	-0.07	0.007
	12	0.005	0.005	0.001	0.007	0.003	-0.28	0.005

Inflows to Lake Taupo								
Hinemaiaia River @ SH1	12	0.012	0.012	0.009	0.016	0.001	0.44	0.013
Kuratau River @ 43 Te Rae Street	12	0.018	0.017	0.011	0.031	0.005	1.32	0.017
Kuratau River @ SH41 Moerangi	12	0.016	0.017	0.004	0.024	0.012	-0.46	0.019
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	0.041	0.040	0.034	0.050	0.006	0.53	0.040
Tauranga-Taupo River @ Te Kono Slackline	12	0.007	0.006	0.003	0.011	0.004	0.47	0.007
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	12	0.005	0.005	0.001	0.010	0.002	0.20	0.005
Tokaanu Stm @ Off SH41 Turangi	12	0.002	0.001	0.001	0.006	0.003	1.04	0.001
Waihaha River @ SH32	12	0.009	0.009	0.004	0.012	0.003	-0.40	0.009
Waitahanui River @ Blake Rd	12	0.002	0.001	0.001	0.008	0.003	1.52	0.003
Whanganui Stm @ Lakeside Lake Taupo	12	0.014	0.014	0.008	0.019	0.004	-0.08	0.014
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	0.016	0.016	0.013	0.019	0.004	-0.11	0.017
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	0.016	0.015	0.013	0.021	0.003	1.21	0.016

	12	0.003	0.003	0.001	0.004	0.001	-0.12	0.003
	12	0.003	0.003	0.001	0.006	0.003	0.24	0.003
	12	0.003	0.003	0.001	0.006	0.003	0.11	0.004
	12	0.008	0.008	0.007	0.010	0.001	0.65	0.008
	12	0.002	0.001	0.001	0.005	0.001	1.68	0.001
	12	0.001	0.001	0.001	0.003	0.001	1.27	0.001
	12	0.001	0.001	0.001	0.002	0.000	3.02	0.001
	12	0.002	0.002	0.001	0.004	0.002	0.18	0.002
	12	0.001	0.001	0.001	0.004	0.000	3.02	0.001
	12	0.003	0.003	0.001	0.005	0.003	-0.04	0.003
	12	0.003	0.003	0.001	0.006	0.001	0.25	0.004
	12	0.003	0.003	0.001	0.004	0.002	-0.49	0.003

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Black Disk (m)

Location	Count	Mean	Median	Min	Max	IQR	Skew	03-07
								Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	11	2.57	2.30	1.50	4.20	1.30	0.46	3.15
Kauaeranga River @ Smiths Cableway/Recorder	11	2.81	2.50	0.30	6.50	1.63	0.81	3.10
Ohinemuri River @ Queens Head	11	2.51	2.50	1.50	3.80	1.18	0.23	2.80
Ohinemuri River @ SH25 Br	11	3.04	3.30	0.80	4.20	1.08	-0.97	3.40
Tairua River @ Morrisons Br Hikuai	11	2.55	2.60	0.90	4.10	1.00	-0.20	2.70
Tapu River @ Tapu-Coroglen Rd	11	4.14	4.20	0.20	9.50	2.23	0.63	4.00
Waiau River @ E309 Rd Ford	11	1.63	1.30	0.20	3.40	1.53	0.37	2.20
Waitekauri River @ U/S Ohinemuri Conflu	11	2.93	2.80	1.10	4.80	0.85	0.07	3.20
Waiwawa River @ SH25 Coroglen	11	2.34	2.40	0.20	4.50	2.10	-0.02	2.85
Wharekawa River @ SH25	11	1.58	1.50	0.80	2.20	0.80	-0.19	1.85
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	10	0.91	0.85	0.40	1.70	0.40	0.94	0.90
Oraka Stm @ Lake Rd	12	1.19	1.30	0.40	2.00	0.85	0.05	0.90
Piako River @ Kiwitahi	12	1.45	1.30	0.50	3.00	1.25	0.57	1.50
Piako River @ Paeroa-Tahuna Rd Br	4	0.83	0.80	0.70	1.00	0.25	0.21	0.70
Piakonui Stm @ Piakonui Rd	12	1.22	1.20	0.50	2.00	0.70	0.35	1.20
Waihou River @ Okauia	12	1.21	1.20	0.80	1.80	0.55	0.48	1.05
Waihou River @ Whites Rd	12	5.53	5.45	4.20	8.50	1.75	0.95	6.20
Waihohu Stm @ Waihohu Rd (Off SH5)	-	-	-	-	-	-	-	-
Waiomou Stm @ Matamata-Tauranga Rd	12	1.21	1.15	0.80	1.90	0.50	0.67	1.20
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	11	0.72	0.70	0.20	1.00	0.33	-0.63	0.70
Waitoa River @ Landsdowne Rd Br	12	1.58	1.00	0.40	4.00	2.20	0.81	1.00
Waitoa River @ Mellon Rd Recorder	12	1.42	1.55	0.50	2.40	1.40	-0.11	1.00
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	11	0.32	0.30	0.10	0.50	0.18	-0.33	0.30
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.95	1.00	0.40	1.80	0.45	0.72	1.10
Karapiro Stm @ Hickey Rd Bridge	12	0.92	0.70	0.30	1.90	0.80	0.78	0.90
Kirikiri Stm @ Tauhara Dr	12	0.42	0.40	0.20	0.70	0.25	0.51	0.40
Komakorau Stm @ Henry Rd	12	0.19	0.20	0.10	0.30	0.05	0.08	0.20
Little Waipa Stm @ Arapuni - Putaruru Rd	11	1.90	1.70	0.80	4.50	1.23	1.29	1.80
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	0.40	0.40	0.10	0.60	0.20	-0.40	0.40
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	11	0.93	1.00	0.40	1.20	0.28	-1.10	1.10
Mangaone Stm @ Annebrooke Rd Br	12	0.72	0.80	0.10	1.00	0.20	-1.49	0.80
Mangaonua Stm @ Hoeka Rd	12	0.77	0.65	0.20	1.50	0.65	0.48	1.00
Mangaonua Stm @ Te Miro Rd	12	1.25	1.30	0.70	1.90	0.55	0.13	1.20
Mangatangi River @ SH2 Maramarua	11	0.94	0.60	0.10	2.50	0.88	0.92	0.85
Mangatawhiri River @ Lyons Rd At Buckingham Br	11	1.61	1.30	0.30	3.50	0.98	0.79	1.80
Mangawara Stm @ Rutherford Rd Br	12	0.23	0.20	0.10	0.40	0.10	0.58	0.20
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.23	0.20	0.20	0.30	0.10	0.71	0.30
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.30	0.30	0.10	0.60	0.20	0.47	0.30
Ohaeroa Stm @ SH22 Br	10	0.69	0.65	0.40	1.20	0.30	0.96	0.80
Opuatia Stm @ Ponganui Rd	11	0.67	0.60	0.20	1.60	0.40	1.13	0.70
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	1.44	1.35	0.50	2.60	1.20	0.18	1.30
Waerenga Stm @ Taniwha Rd	12	0.94	0.90	0.20	1.70	0.55	0.10	1.10
Waitawhirihiri Stm @ Edgecumbe Street	12	0.27	0.30	0.10	0.50	0.10	0.71	0.30
Whakapipi Stm @ SH22 Br	10	1.33	1.30	0.50	2.30	1.10	0.13	1.40
Whakauru Stm @ U/S SH1 Br	11	0.88	0.90	0.50	1.70	0.33	1.19	1.10
Whangamarino River @ Island Block Rd	11	0.17	0.20	0.10	0.30	0.10	0.25	0.20
Whangamarino River @ Jefferies Rd Br	12	0.50	0.50	0.20	0.90	0.30	0.28	0.50
Whangape Stm @ Rangiriri-Glen Murray Rd	11	0.21	0.20	0.10	0.40	0.15	0.57	0.20

Conductivity at 25 °C (mS m⁻¹)

Count	Mean	Median	Min	Max	IQR	Skew	03-07
							Median
12	8.2	8.3	7.6	8.8	0.6	-0.23	8.3
12	7.5	7.6	5.2	9.3	1.8	-0.33	8.2
12	19.2	17.8	10.7	32.1	10.4	0.67	17.5
12	7.7	7.8	7.1	8.0	0.5	-0.78	7.7
12	6.0	6.0	5.2	6.5	0.5	-0.57	6.1
12	10.1	10.1	6.7	11.0	1.0	<u>-2.11</u>	10.2
12	9.4	9.6	6.7	10.4	0.8	<u>-1.87</u>	9.5
12	12.6	12.9	8.9	18.0	3.9	0.38	11.7
12	6.4	6.4	4.3	7.3	1.2	-1.07	6.8
12	7.4	7.4	6.9	8.0	0.4	0.40	7.4
12	11.6	11.9	10.5	12.4	1.2	-0.49	11.6
12	12.8	11.2	9.8	19.0	5.2	0.93	11.8
12	15.1	14.9	13.5	17.5	1.5	0.73	14.5
4	22.9	22.9	21.9	24.0	1.6	0.06	21.5
12	7.8	8.2	6.6	8.9	1.7	-0.24	7.5
12	9.8	9.6	9.1	11.0	1.1	0.56	10.2
12	8.0	8.0	7.9	8.0	0.1	-0.34	8.0
12	5.5	5.5	5.2	5.7	0.2	-0.81	5.5
12	6.8	6.6	6.3	7.5	0.8	0.55	7.2
12	18.3	17.9	14.2	22.7	5.0	0.13	16.8
12	16.0	15.8	14.6	18.4	2.1	0.44	15.9
12	35.2	35.2	22.0	47.8	13.8	0.06	31.0
12	27.2	26.4	23.0	35.1	4.0	1.04	25.5
12	49.9	48.1	32.3	84.4	16.2	0.94	49.1
12	13.7	13.6	11.0	18.2	3.0	0.71	12.9
12	20.4	20.4	15.2	24.4	2.5	-0.49	21.1
12	26.1	24.9	23.2	33.8	4.0	1.22	25.4
12	9.7	9.5	9.4	10.4	0.4	1.31	9.7
12	20.1	19.8	18.8	24.9	1.1	<u>2.06</u>	19.5
12	15.2	15.2	13.0	17.5	1.7	0.05	14.5
12	26.4	26.5	25.3	27.0	1.0	-0.61	26.9
12	18.3	18.8	9.1	21.0	2.0	<u>-2.21</u>	19.7
12	10.9	10.6	8.6	19.0	1.9	<u>2.28</u>	9.6
12	13.2	13.4	11.7	14.3	1.2	-0.58	13.4
12	12.3	12.5	9.8	13.7	1.8	-0.68	12.1
12	22.7	22.3	19.4	27.8	2.6	0.84	21.7
12	21.6	21.1	20.5	23.9	1.2	1.15	21.0
12	14.8	14.6	12.9	16.5	1.8	-0.07	14.0
12	16.7	16.6	14.5	19.1	3.1	0.14	16.0
12	17.9	17.5	16.3	20.2	1.6	0.68	17.0
12	10.2	10.0	9.7	11.0	1.1	0.54	10.3
12	12.3	12.3	11.5	13.1	1.2	0.01	11.9
12	19.8	20.3	16.1	21.3	1.2	-1.43	20.3
12	19.8	19.4	15.8	24.5	4.8	0.43	18.8
12	6.8	6.8	6.6	6.9	0.2	-0.66	6.7
12	16.4	16.7	14.5	17.5	1.6	-0.60	16.1
12	16.5	16.3	14.8	18.5	1.3	0.37	15.6
12	19.5	20.4	13.7	23.0	3.5	-0.76	19.7

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Waipa River and Tributaries								
Kaniwhaniwha Stm @ Wright Rd	12	1.14	1.10	0.60	2.10	0.20	1.19	1.10
Mangaohoi Stm @ South Branch Maru Rd	12	1.25	1.20	0.90	1.70	0.50	0.36	1.30
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	1.04	1.15	0.20	1.70	0.85	-0.38	1.10
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	0.73	0.60	0.10	1.70	0.30	0.89	0.60
Mangapu River @ Otorohanga	12	0.88	0.80	0.20	1.80	0.70	0.32	0.70
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	1.43	1.50	0.30	2.50	0.90	-0.07	1.50
Mangauika Stm @ Te Awamutu Borough W/S Intake	11	4.58	4.40	2.20	6.30	1.83	-0.12	4.00
Ohote Stm @ Whatawhata/Horotiu Rd	12	0.60	0.55	0.20	1.10	0.50	0.20	0.70
Puniu River @ Bartons Corner Rd Br	12	1.33	1.40	0.40	2.40	1.05	0.01	1.20
Waipa River @ Mangaokewa Rd	12	1.67	1.75	1.00	2.40	0.65	-0.10	1.90
Waipa River @ Pirongia-Ngutu Rd Br	12	0.86	0.80	0.30	1.40	0.65	0.12	0.70
Waipa River @ SH3 Otorohanga	12	1.59	1.50	0.30	3.30	0.85	0.49	1.20
Waitomo Stm @ SH31 Otorohanga	12	1.02	1.05	0.20	2.40	0.75	0.62	0.60
Waitomo Stm @ Tumutumu Rd	12	1.14	1.20	0.40	1.80	1.05	-0.09	0.80

12	9.8	9.8	8.4	11.0	0.9	-0.34	9.9
12	7.9	8.1	6.0	8.9	1.2	-0.89	7.9
12	15.7	15.9	10.1	20.3	3.4	-0.39	14.7
12	19.9	19.6	17.2	24.4	4.0	0.51	17.7
12	19.4	19.8	14.8	23.0	4.0	-0.39	18.2
12	6.5	6.7	5.1	7.6	1.3	-0.51	6.7
12	6.7	6.7	6.0	7.7	0.6	0.37	6.6
12	17.5	17.0	16.0	20.2	1.6	0.93	17.9
12	8.0	8.2	6.3	8.8	0.5	-1.19	8.3
12	5.1	5.1	4.4	5.7	0.3	-0.40	5.2
12	11.7	11.9	10.1	12.6	1.2	-0.75	11.6
12	7.9	8.0	6.6	8.9	1.3	-0.37	7.9
12	19.7	20.0	15.0	23.5	2.5	-0.66	18.7
12	19.4	19.7	16.3	22.3	2.2	-0.36	19.0

Tributaries to the upper Waikato River								
Kawaunui Stm @ SH5 Br	11	1.19	1.10	0.80	1.80	0.58	0.52	1.10
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	11	1.13	1.30	0.60	1.50	0.35	-0.73	1.10
Mangakara Stm (Reporoa) @ SH5	11	0.90	0.90	0.50	1.70	0.45	1.04	0.70
Mangakino Stm (Whakamaru) @ Sandel Rd	12	2.37	2.40	1.40	3.30	0.80	-0.17	2.00
Otamakokore Stm @ Hossack Rd	11	1.06	1.00	0.20	1.80	0.55	-0.28	1.20
Pueto Stm @ Broadlands Rd Br	11	1.89	1.80	1.30	3.10	0.63	1.07	2.00
Tahunaatara Stm @ Ohakuri Rd	11	1.24	1.20	0.60	1.90	0.55	0.12	1.40
Torepatutahi Stm @ Vaile Rd Br	-	-	-	-	-	-	-	-
Waiotapu Stm @ Campbell Rd Br	11	1.23	1.10	0.70	1.90	0.55	0.54	1.30
Waiotapu Stm @ Homestead Rd Br	11	0.77	0.70	0.50	1.30	0.38	0.78	0.70
Waipapa Stm (Mokai) @ Tirohanga Rd Br	11	1.26	1.10	0.60	1.90	0.78	0.06	1.10
Whirinaki Stm @ Corbett Rd	-	-	-	-	-	-	-	-

12	14.1	14.0	12.8	15.8	1.8	0.21	14.1
12	8.7	8.7	8.5	8.8	0.2	-0.45	8.7
12	9.4	9.5	9.1	9.9	0.6	0.07	9.2
12	6.6	6.8	5.5	7.1	0.8	-0.80	6.5
12	38.7	38.8	35.9	41.0	4.0	-0.06	36.8
12	11.4	11.7	8.8	12.0	0.3	<u>-2.72</u>	11.5
12	7.5	7.5	7.3	7.6	0.2	-0.66	7.6
12	12.4	9.0	8.7	50.0	0.5	<u>3.01</u>	9.4
12	71.2	71.4	66.5	75.0	4.0	-0.19	70.0
12	45.2	48.2	11.7	52.0	4.4	<u>-2.65</u>	45.9
12	38.5	38.8	36.0	40.0	2.5	-0.49	36.9
12	6.7	6.6	6.6	6.9	0.1	1.28	6.8

West Coast								
Awakino River @ Gribbon Rd	12	2.24	1.70	0.40	4.60	1.90	0.56	1.80
Awakino River @ SH3 Awakau Rd Junction	12	1.04	1.05	0.10	1.70	0.95	-0.35	1.10
Manganui River @ Off Manganui Rd	12	0.97	1.00	0.10	1.90	0.85	0.09	0.90
Mangaotaki River @ SH3 Br	12	0.99	0.85	0.20	2.40	0.50	0.97	0.80
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	1.05	1.00	0.10	2.20	1.35	0.16	1.10
Mokau River @ Awakau Rd	12	0.40	0.30	0.00	1.10	0.35	0.91	0.30
Mokau River @ Mangaokewa Rd (Off SH30)	12	1.29	1.15	0.50	2.20	0.60	0.45	1.20
Mokau River @ Totoro Rd Recorder	12	0.85	0.80	0.20	2.20	0.60	1.03	0.70
Mokaiti Stm @ Three Way Point - Aria	12	0.62	0.55	0.20	1.30	0.50	0.78	0.50
Ohautira Stm @ Waingaro Te Uku Rd	12	0.75	0.80	0.20	1.20	0.35	-0.70	0.70
Oparau River @ Langdon Rd (Off Okupata Rd)	12	1.47	1.25	0.80	2.50	1.00	0.47	1.30
Tawarau River @ Off Speedies Rd	12	1.13	1.05	0.30	2.50	1.05	0.55	1.10
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	0.88	0.95	0.20	1.50	0.45	-0.44	0.70
Waitetuna River @ Te Uku-Waingaro Rd	12	0.80	0.80	0.30	1.20	0.45	-0.32	0.80

12	7.8	7.2	6.3	15.0	0.6	<u>2.85</u>	7.1
12	12.4	12.3	7.2	17.0	4.0	0.06	12.4
12	10.7	10.4	8.5	13.0	1.7	0.17	10.4
12	13.6	13.7	12.4	14.8	0.8	-0.38	13.5
12	13.3	14.1	9.9	16.1	3.3	-0.51	14.0
12	13.8	13.1	10.0	19.7	3.1	0.80	12.8
12	6.8	6.8	5.6	7.7	0.9	-0.35	6.5
12	12.2	12.3	10.0	14.4	1.5	-0.13	11.8
12	11.4	11.0	9.4	13.5	2.9	0.26	10.6
12	13.7	14.0	11.3	15.0	1.8	-0.58	13.5
12	8.5	8.4	7.5	9.9	1.0	0.54	8.6
12	13.2	13.7	10.5	15.4	2.0	-0.46	13.2
12	14.5	14.6	12.6	16.6	1.9	0.01	14.1
12	10.0	10.1	9.2	11.0	0.7	0.13	10.2

Inflows to Lake Taupo								
Hinemaiaia River @ SH1	12	2.83	2.85	1.70	3.90	0.65	-0.31	2.80
Kuratau River @ 43 Te Rae Street	12	3	3	1	5	1	1	3
Kuratau River @ SH41 Moerangi	-	-	-	-	-	-	-	-
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	1.28	1.30	0.90	1.70	0.35	0.22	1.30
Tauranga-Taupo River @ Te Kono Slackline	12	3.65	3.75	2.50	4.80	1.60	-0.05	3.20
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	-	-	-	-	-	-	-	-
Tokaanu Stm @ Off SH41 Turangi	-	-	-	-	-	-	-	-
Waihaha River @ SH32	12	3.81	3.90	1.60	6.10	1.50	-0.02	3.95
Waitahanui River @ Blake Rd	12	3.38	3.50	1.80	4.60	1.70	-0.28	3.65
Whanganui Stm @ Lakeside Lake Taupo	-	-	-	-	-	-	-	-
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	-	-	-	-	-	-	-	-
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	-	-	-	-	-	-	-	-

12	6.2	6.2	5.3	6.8	0.8	-0.41	6.1
12	4.4	4.4	3.8	4.9	0.6	-0.16	4.3
12	7.5	7.0	5.7	10.4	2.4	0.95	6.7
12	12.0	12.0	11.8	12.4	0.3	0.64	12.0
12	5.2	5.2	4.3	6.2	1.0	0.12	4.9
12	12.9	13.3	10.7	14.6	1.9	-0.48	12.6
12	9.9	10.0	9.7	10.1	0.2	-0.60	10.0
12	5.0	5.1	4.2	5.8	0.9	-0.09	4.8
12	7.4	7.4	7.2	7.6	0.3	0.03	7.4
12	6.0	6.2	4.8	6.9	1.2	-0.40	5.7
12	8.0	8.2	7.0	8.5	0.9	-0.70	7.8
12	7.8	8.1	6.8	8.5	0.9	-0.65	7.7

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Dissolved Oxygen (% Saturation)

Location	Count	Mean	Median	Min	Max	IQR	Skew	03-07
								Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	94.3	94.2	90.0	101.0	4.0	0.47	95.9
Kauaeranga River @ Smiths Cableway/Recorder	12	97.6	97.5	92.4	103.6	7.5	0.15	99.8
Ohinemuri River @ Queens Head	12	105.6	105.8	94.2	119.0	10.1	0.42	106.4
Ohinemuri River @ SH25 Br	12	103.9	105.5	93.6	112.9	10.3	-0.28	106.4
Tairua River @ Morrisons Br Hikuai	12	99.8	100.7	90.3	109.3	8.9	0.10	99.1
Tapu River @ Tapu-Coroglen Rd	12	99.6	98.1	94.3	106.1	7.0	0.30	102.9
Waiau River @ E309 Rd Ford	12	99.7	100.1	93.4	105.5	8.2	-0.09	102.6
Waitekauri River @ U/S Ohinemuri Conflu	12	102.4	102.1	93.6	111.4	6.4	0.01	105.4
Waiwawa River @ SH25 Coroglen	12	98.6	98.1	92.8	104.4	6.6	0.19	100.9
Wharekawa River @ SH25	12	93.0	95.8	59.3	107.9	11.8	-1.66	96.2
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	94.6	93.2	91.2	99.5	5.3	0.57	97.9
Oraka Stm @ Lake Rd	12	90.2	91.4	82.3	97.1	7.9	-0.49	93.3
Piako River @ Kiwitahi	12	74.6	80.3	34.4	112.5	19.4	-0.35	82.7
Piako River @ Paeroa-Tahuna Rd Br	4	85.9	86.6	79.8	90.5	6.0	-0.53	81.5
Piakonui Stm @ Piakonui Rd	12	95.6	94.4	92.3	101.6	3.2	1.11	99.7
Waihou River @ Okauia	12	93.2	92.6	89.6	97.9	5.8	0.35	94.0
Waihou River @ Whites Rd	12	99.2	98.2	94.4	110.0	6.0	1.09	101.5
Waihohu Stm @ Waihohu Rd (Off SH5)	11	92.8	92.3	88.8	97.9	5.3	0.30	94.6
Waiomou Stm @ Matamata-Tauranga Rd	12	94.6	93.9	90.3	100.2	5.5	0.49	95.5
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	85.4	86.8	61.5	101.7	9.8	-0.83	92.8
Waitoa River @ Landsdowne Rd Br	12	94.6	88.4	71.8	132.3	17.8	0.99	89.8
Waitoa River @ Mellon Rd Recorder	12	73.3	74.2	61.8	83.0	7.1	-0.47	74.9
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	11	82.9	85.0	31.4	104.5	14.0	-1.46	93.0
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	84.5	84.9	79.2	88.5	4.0	-0.35	86.9
Karapiro Stm @ Hickey Rd Bridge	12	86.8	87.5	80.5	92.8	5.4	-0.25	91.4
Kirikiri Stm @ Tauhara Dr	12	65.1	63.7	61.0	74.6	5.2	1.11	67.7
Komakorau Stm @ Henry Rd	12	60.4	57.4	45.1	78.1	15.8	0.35	63.8
Little Waipa Stm @ Arapuni - Putaruru Rd	12	100.3	99.9	77.1	122.5	10.9	-0.07	102.3
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	84.6	85.6	77.8	87.9	4.5	-0.97	87.6
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	101.3	101.8	94.7	111.9	8.6	0.44	102.6
Mangaone Stm @ Annebrooke Rd Br	12	77.1	77.2	66.6	85.8	4.6	-0.54	76.7
Mangaonua Stm @ Hoeka Rd	12	81.2	81.4	75.3	85.0	2.7	-0.86	81.4
Mangaonua Stm @ Te Miro Rd	12	97.2	96.9	93.7	103.7	4.8	0.69	99.7
Mangatangi River @ SH2 Maramarua	12	80.8	79.0	69.4	94.9	10.2	0.35	87.1
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	105.7	106.7	92.9	118.1	10.7	-0.08	107.8
Mangawara Stm @ Rutherford Rd Br	11	69.8	71.5	56.1	78.6	5.5	-0.97	71.6
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	80.7	81.0	75.2	86.2	3.9	-0.01	85.7
Matahuru Stm @ Waiterimu Road Below Confluence	12	83.2	83.4	76.0	89.7	4.9	-0.09	86.0
Ohaeroa Stm @ SH22 Br	12	98.2	95.2	89.9	126.0	7.3	<u>2.15</u>	100.1
Opuatia Stm @ Ponganui Rd	12	96.4	95.7	90.0	102.9	7.3	0.15	98.2
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	100.4	98.9	92.2	110.2	11.4	0.41	99.4
Waerenga Stm @ Taniwha Rd	12	94.7	93.6	82.9	103.8	7.4	0.01	99.6
Waitawhirihiri Stm @ Edgecumbe Street	12	79.2	79.6	74.4	83.3	4.4	-0.29	83.1
Whakapipi Stm @ SH22 Br	12	82.2	83.0	69.9	92.9	13.9	-0.17	90.7
Whakauru Stm @ U/S SH1 Br	12	95.6	94.0	91.8	102.9	5.3	0.00	96.8
Whangamarino River @ Island Block Rd	11	51.9	44.9	22.9	114.0	16.5	1.52	44.4
Whangamarino River @ Jefferies Rd Br	12	74.5	78.0	45.7	88.5	12.7	-1.17	77.3
Whangape Stm @ Rangiriri-Glen Murray Rd	12	95.7	95.0	82.0	106.9	17.0	-0.05	94.4

Dissolved Oxygen (g m⁻³)

Count	Mean	Median	Min	Max	IQR	Skew	03-07
							Median
Coromandel							
12	9.6	9.5	8.5	10.9	1.1	0.23	10.0
12	9.9	9.8	8.6	11.4	0.8	0.38	10.1
12	10.2	10.1	9.0	11.3	0.9	-0.01	10.5
12	10.1	10.2	8.9	11.2	0.8	-0.33	10.3
12	9.9	9.9	8.7	10.6	0.7	-0.63	10.0
12	10.1	10.0	9.1	11.1	0.8	0.08	10.5
12	10.1	10.2	9.2	11.3	0.9	0.32	10.5
12	10.2	10.1	9.2	11.2	1.0	0.12	10.6
12	10.0	10.0	9.1	11.3	0.6	0.57	10.2
12	9.2	9.6	6.0	10.5	0.8	-1.70	9.7
Hauraki							
12	9.7	9.6	9.0	11.3	0.7	1.50	10.1
12	9.3	9.4	8.0	10.2	1.6	-0.30	9.5
12	7.4	8.1	3.0	10.8	2.6	-0.68	8.5
4	8.4	8.5	7.6	8.9	1.1	-0.29	8.2
12	9.9	10.0	9.3	10.5	0.7	0.02	10.4
12	9.5	9.6	8.7	10.4	0.9	0.15	9.6
12	10.2	10.1	9.8	11.5	0.4	<u>1.82</u>	10.5
11	9.8	9.9	9.0	10.7	0.6	0.11	10.0
12	9.8	9.8	8.8	10.7	1.0	0.01	9.8
12	8.4	9.0	5.9	10.1	1.9	-0.69	9.3
12	9.3	9.4	6.8	11.6	0.7	-0.26	9.3
12	7.3	7.3	5.7	8.2	0.5	-1.13	7.4
Tributaries to the lower Waikato River							
11	8.1	8.7	2.8	11.9	2.0	-0.82	9.3
12	8.7	8.5	7.5	10.4	1.5	0.57	8.9
12	8.7	8.6	7.5	10.3	1.4	0.36	9.3
12	6.6	6.4	5.7	8.2	1.1	0.92	6.8
12	6.3	6.0	4.8	9.5	2.2	0.82	6.3
12	10.2	10.3	7.6	11.8	0.5	-1.37	10.4
12	8.2	8.4	5.0	9.7	1.0	-1.39	8.7
12	10.0	10.0	9.3	11.0	0.6	0.32	10.4
12	8.0	8.1	6.5	9.1	1.1	-0.42	8.1
12	8.3	8.3	7.2	9.4	0.7	0.20	8.2
12	9.8	9.9	9.0	10.6	1.0	0.01	10.2
12	7.9	7.9	6.1	9.6	1.7	0.10	8.7
12	10.2	10.0	9.4	11.3	0.9	0.72	10.4
11	7.2	7.4	5.2	9.6	1.4	0.15	7.3
12	8.3	8.1	7.8	9.6	0.5	1.36	8.8
12	8.5	8.5	6.8	11.1	1.4	0.54	8.7
12	10.0	9.7	9.0	11.4	1.4	0.55	10.4
12	9.7	9.7	8.7	11.0	1.1	0.43	9.9
12	10.2	10.4	9.2	11.0	1.1	-0.22	10.3
12	9.7	9.6	7.5	11.4	1.5	-0.27	10.3
12	7.7	7.6	7.1	8.9	0.8	0.87	8.2
12	8.2	8.1	6.4	10.3	2.3	0.09	9.2
12	9.9	10.0	8.8	10.7	0.7	-0.54	10.1
11	5.0	4.8	2.0	9.9	1.7	1.03	4.3
12	7.6	8.1	4.0	11.0	1.6	-0.39	8.0
12	9.4	9.2	7.3	12.1	1.7	0.25	9.3

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Waipa River and Tributaries								
Kaniwhaniwha Stm @ Wright Rd	12	86.4	86.4	83.1	90.3	4.0	0.20	88.6
Mangaohoi Stm @ South Branch Maru Rd	12	98.2	98.2	83.1	104.0	7.4	-1.33	100.4
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	91.1	91.1	86.0	93.7	2.4	-0.89	95.4
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	11	94.7	90.9	77.5	129.9	13.8	1.22	86.9
Mangapu River @ Otorohanga	12	93.3	92.9	81.1	109.2	9.6	0.53	93.8
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	95.6	94.7	90.0	101.1	7.6	0.20	95.0
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	98.1	97.6	94.1	102.9	6.4	0.08	100.3
Ohote Stm @ Whatawhata/Horotiu Rd	12	42.6	39.9	17.3	74.4	30.3	0.23	47.3
Puniu River @ Bartons Corner Rd Br	12	95.2	94.2	85.5	108.9	11.5	0.51	93.6
Waipa River @ Mangaokewa Rd	12	97.6	96.2	94.5	103.4	4.8	0.84	100.7
Waipa River @ Pirongia-Ngutunui Rd Br	12	89.8	89.2	83.2	96.9	5.7	0.10	91.2
Waipa River @ SH3 Otorohanga	12	96.7	96.6	90.7	104.9	5.6	0.47	98.5
Waitomo Stm @ SH31 Otorohanga	12	99.5	97.7	89.7	113.5	14.7	0.38	99.4
Waitomo Stm @ Tumutumu Rd	12	100.2	98.6	91.9	112.9	10.7	0.65	100.2

	12	8.9	8.8	7.6	10.5	1.0	0.42	9.1
	12	9.9	9.7	9.4	11.5	0.6	<u>2.02</u>	10.2
	12	9.6	9.6	8.3	11.3	0.9	0.45	10.1
	11	9.2	9.1	8.0	11.2	1.9	0.66	8.4
	12	9.2	9.1	8.3	10.6	0.8	0.84	9.5
	12	9.6	9.6	8.2	10.9	0.8	-0.08	9.6
	12	10.3	10.3	9.7	11.2	0.5	0.70	10.6
	12	4.3	3.8	1.7	7.4	3.6	0.30	4.7
	12	9.4	9.4	8.7	10.6	0.8	0.70	9.3
	12	9.7	9.7	8.5	11.0	0.7	0.13	10.2
	12	9.0	8.9	8.2	10.6	0.5	1.37	9.3
	12	9.7	9.6	9.0	11.4	0.4	1.58	9.9
	12	9.9	9.8	9.3	11.4	0.8	1.18	10.1
	12	10.1	10.1	9.6	10.7	0.5	0.40	10.5

Tributaries to the upper Waikato River								
Kawaunui Stm @ SH5 Br	12	80.0	79.1	74.5	88.7	5.6	0.61	86.5
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	92.8	91.9	88.7	101.0	5.2	0.93	94.4
Mangakara Stm (Reporoa) @ SH5	12	89.5	88.6	86.6	94.8	4.6	0.60	92.5
Mangakino Stm (Whakamaru) @ Sandel Rd	12	100.3	98.9	96.4	107.5	6.2	0.75	102.8
Otamakokore Stm @ Hossack Rd	12	97.4	96.4	87.3	112.0	10.2	0.41	96.8
Pueto Stm @ Broadlands Rd Br	12	92.6	90.8	88.0	101.2	5.9	0.89	95.1
Tahunaatara Stm @ Ohakuri Rd	12	100.6	98.8	94.2	111.9	9.0	0.74	102.7
Torepatutahi Stm @ Vaile Rd Br	12	103.1	102.3	94.7	115.8	9.4	0.50	101.9
Waiotapu Stm @ Campbell Rd Br	12	85.5	84.8	81.5	93.1	5.3	0.66	87.9
Waiotapu Stm @ Homestead Rd Br	12	86.0	84.7	74.7	112.3	7.5	1.63	86.1
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	97.5	96.2	92.9	107.5	5.2	1.21	99.5
Whirinaki Stm @ Corbett Rd	12	94.6	93.2	90.5	102.5	5.9	0.89	97.6

	12	7.8	8.0	6.9	8.4	0.7	-0.60	8.4
	12	9.5	9.6	8.8	10.0	0.6	-0.37	9.8
	12	9.0	9.0	8.4	9.6	0.7	0.06	9.4
	12	10.4	10.4	9.5	11.3	0.6	0.15	10.7
	12	8.3	8.3	7.7	9.1	0.7	0.20	8.5
	12	9.3	9.4	8.6	9.8	0.5	-0.39	9.6
	12	10.2	10.3	9.5	11.2	1.0	0.21	10.5
	12	10.2	10.3	9.6	10.7	0.5	-0.42	10.3
	12	6.4	6.5	6.0	7.0	0.4	0.33	6.5
	12	7.7	7.7	6.3	9.4	1.0	0.44	7.9
	12	8.3	8.2	7.7	9.1	0.5	0.86	8.4
	12	9.7	9.7	9.3	10.2	0.5	0.09	10.2

West Coast								
Awakino River @ Gribbon Rd	12	99.9	97.3	93.2	119.3	8.5	1.44	101.3
Awakino River @ SH3 Awakau Rd Junction	12	102.3	97.7	92.1	119.9	18.1	0.67	102.8
Manganui River @ Off Manganui Rd	12	95.9	94.3	90.2	104.0	7.8	0.46	100.8
Mangaotaki River @ SH3 Br	12	98.6	97.5	94.4	104.2	6.2	0.45	102.1
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	102.6	99.8	94.2	117.3	11.8	0.56	103.8
Mokau River @ Awakau Rd	12	90.5	90.6	86.4	97.0	2.2	0.83	94.0
Mokau River @ Mangaokewa Rd (Off SH30)	12	96.3	94.9	92.6	103.5	4.3	1.05	99.8
Mokau River @ Totoro Rd Recorder	12	99.8	98.6	95.9	105.0	4.4	0.60	103.2
Mokauiti Stm @ Three Way Point - Aria	12	90.8	91.1	73.7	101.8	7.2	-0.87	94.2
Ohautira Stm @ Waingaro Te Uku Rd	12	92.7	92.3	90.2	98.3	3.1	1.00	94.4
Oparau River @ Langdon Rd (Off Okupata Rd)	12	105.3	107.1	95.2	113.7	12.5	-0.16	104.1
Tawarau River @ Off Speedies Rd	12	102.2	99.8	95.3	113.8	10.5	0.50	103.1
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	94.5	92.3	86.7	107.7	12.0	0.64	93.6
Waitetuna River @ Te Uku-Waingaro Rd	12	94.7	94.5	92.3	99.3	4.2	0.59	96.3

	12	10.4	10.3	9.0	11.6	0.9	-0.17	10.7
	12	10.4	10.1	9.4	12.1	1.6	0.59	10.9
	12	9.9	9.9	8.5	11.4	1.0	0.04	10.5
	12	10.2	10.2	9.2	11.5	0.7	0.48	10.6
	12	10.5	10.5	9.6	11.3	1.0	0.01	10.8
	12	9.1	9.1	8.0	11.0	1.3	0.63	9.6
	12	10.0	10.0	8.8	11.7	0.7	0.73	10.4
	12	10.2	10.2	9.1	11.7	1.1	0.45	10.6
	12	9.1	9.2	7.5	11.1	1.4	-0.01	9.7
	12	9.8	9.7	9.0	11.7	0.9	1.16	10.2
	12	10.7	10.6	10.2	11.8	0.6	0.93	10.8
	12	10.5	10.6	9.9	11.3	0.5	0.13	10.7
	12	9.5	9.3	8.2	11.3	1.1	0.56	9.5
	12	9.8	9.7	8.8	11.5	0.8	1.02	10.0

Inflows to Lake Taupo								
Hinemaiaia River @ SH1	12	99.7	99.2	92.2	107.4	6.4	0.02	101.5
Kuratau River @ 43 Te Rae Street	12	91.4	90.7	87.6	96.2	4.4	0.37	94.3
Kuratau River @ SH41 Moerangi	12	98.3	97.2	86.9	111.7	7.1	0.45	100.8
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	86.0	85.1	84.1	91.3	2.4	1.27	88.2
Tauranga-Taupo River @ Te Kono Slackline	12	99.6	98.3	94.6	106.5	7.1	0.36	102.5
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	12	98.8	97.7	90.7	115.0	6.4	1.20	98.8
Tokaanu Stm @ Off SH41 Turangi	12	78.9	78.3	74.4	85.4	3.8	0.64	82.6
Waihaha River @ SH32	12	99.4	98.2	94.6	108.1	6.3	0.68	102.5
Waitahanui River @ Blake Rd	12	97.7	95.6	92.3	106.9	7.1	0.74	99.7
Whanganui Stm @ Lakeside Lake Taupo	12	99.1	98.8	89.2	110.1	5.6	0.26	101.4
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	93.5	92.8	90.2	99.0	2.9	0.91	96.9
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	94.5	93.9	90.9	101.5	4.5	0.90	97.4

	12	10.4	10.6	9.2	11.6	0.8	-0.24	10.7
	12	9.7	9.6	8.7	10.7	0.6	0.22	10.1
	12	9.9	10.1	8.5	10.9	1.1	-0.43	10.4
	12	9.2	9.1	8.5	10.5	0.4	1.42	9.4
	12	10.6	10.4	9.5	11.9	0.9	0.39	11.1
	12	10.0	10.1	8.6	10.9	1.2	-0.44	10.3
	12	8.1	8.0	7.7	9.1	0.5	1.46	8.6
	12	10.2	10.3	9.5	11.0	0.7	-0.04	10.9
	12	10.5	10.4	9.7	13.6	0.5	<u>2.53</u>	10.7
	12	10.3	10.3	8.8	11.3	0.6	-0.70	10.9
	12	9.7	9.6	8.9	10.8	0.5	0.91	10.1
	12	9.8	9.8	9.0	10.8	0.5	0.46	10.3

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Dissolved Reactive Phosphorus (g m⁻³)

Location	03-07							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	0.003	0.002	0.002	0.006	0.003	0.94	0.005
Kauaeranga River @ Smiths Cableway/Recorder	12	0.003	0.002	0.002	0.009	0.000	<u>3.02</u>	0.002
Ohinemuri River @ Queens Head	12	0.007	0.005	0.002	0.023	0.007	1.40	0.010
Ohinemuri River @ SH25 Br	12	0.004	0.004	0.002	0.006	0.003	0.04	0.007
Tairua River @ Morrisons Br Hikuai	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002
Tapu River @ Tapu-Coroglen Rd	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002
Waiau River @ E309 Rd Ford	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002
Waitekauri River @ U/S Ohinemuri Conflu	12	0.002	0.002	0.002	0.007	0.000	<u>3.02</u>	0.002
Waiwawa River @ SH25 Coroglen	12	0.002	0.002	0.002	0.005	0.000	<u>3.02</u>	0.002
Wharekawa River @ SH25	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.047	0.051	0.036	0.055	0.010	-0.58	0.043
Oraka Stm @ Lake Rd	12	0.094	0.078	0.073	0.190	0.014	<u>1.91</u>	0.093
Piako River @ Kiwitahi	12	0.075	0.073	0.041	0.121	0.019	0.47	0.064
Piako River @ Paeroa-Tahuna Rd Br	4	0.369	0.416	0.112	0.532	0.226	-0.81	0.151
Piakonui Stm @ Piakonui Rd	12	0.012	0.011	0.005	0.024	0.005	1.17	0.011
Waihou River @ Okauia	12	0.069	0.066	0.055	0.110	0.005	<u>2.53</u>	0.067
Waihou River @ Whites Rd	12	0.076	0.077	0.065	0.084	0.007	-0.65	0.082
Waihohu Stm @ Waihohu Rd (Off SH5)	12	0.012	0.013	0.007	0.016	0.004	-0.49	0.015
Waiomou Stm @ Matamata-Tauranga Rd	12	0.023	0.023	0.016	0.028	0.006	-0.34	0.026
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.042	0.045	0.018	0.060	0.016	-0.60	0.031
Waitoa River @ Landsdowne Rd Br	12	0.037	0.038	0.007	0.059	0.014	-0.60	0.036
Waitoa River @ Mellon Rd Recorder	12	0.132	0.104	0.062	0.294	0.077	1.26	0.149
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otatau Rd Br opp Moseley Rd	12	0.008	0.006	0.002	0.021	0.009	1.02	0.006
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002
Karapiro Stm @ Hickey Rd Bridge	12	0.058	0.062	0.028	0.079	0.026	-0.62	0.044
Kirikiri Stm @ Tauhara Dr	12	0.014	0.015	0.005	0.022	0.006	-0.14	0.015
Komakorau Stm @ Henry Rd	12	0.011	0.006	0.002	0.043	0.007	<u>2.04</u>	0.012
Little Waipa Stm @ Arapuni - Putaruru Rd	12	0.055	0.055	0.034	0.075	0.015	-0.01	0.057
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	0.227	0.165	0.020	0.662	0.244	1.19	0.177
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	0.653	0.634	0.287	0.993	0.300	0.05	0.530
Mangaone Stm @ Annebrooke Rd Br	12	0.073	0.070	0.058	0.098	0.017	0.72	0.068
Mangaonua Stm @ Hoeka Rd	12	0.012	0.012	0.007	0.021	0.006	0.68	0.013
Mangaonua Stm @ Te Miro Rd	12	0.020	0.018	0.007	0.053	0.009	<u>2.06</u>	0.018
Mangatangi River @ SH2 Maramarua	12	0.041	0.041	0.025	0.066	0.017	0.57	0.032
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.013	0.012	0.006	0.024	0.007	0.82	0.011
Mangawara Stm @ Rutherford Rd Br	12	0.057	0.053	0.038	0.095	0.027	0.88	0.043
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.066	0.035	0.013	0.268	0.062	<u>1.87</u>	0.039
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.040	0.039	0.026	0.054	0.016	0.07	0.030
Ohaeroa Stm @ SH22 Br	12	0.012	0.009	0.002	0.034	0.003	1.58	0.009
Opuatia Stm @ Ponganui Rd	12	0.007	0.006	0.004	0.011	0.002	0.99	0.007
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	0.103	0.099	0.081	0.141	0.024	0.77	0.110
Waerenga Stm @ Taniwha Rd	12	0.034	0.033	0.012	0.054	0.024	-0.03	0.026
Waitawhirihiri Stm @ Edgecumbe Street	12	0.046	0.035	0.014	0.130	0.031	1.47	0.030
Whakapipi Stm @ SH22 Br	12	0.042	0.038	0.013	0.097	0.030	1.08	0.019
Whakauru Stm @ U/S SH1 Br	12	0.015	0.014	0.006	0.030	0.007	0.81	0.018
Whangamarino River @ Island Block Rd	12	0.006	0.002	0.002	0.015	0.009	0.60	0.006
Whangamarino River @ Jefferies Rd Br	12	0.042	0.043	0.028	0.056	0.010	-0.23	0.035
Whangape Stm @ Rangiriri-Glen Murray Rd	12	0.003	0.002	0.002	0.010	0.000	<u>3.02</u>	0.002

Total Phosphorus (g m⁻³)

Location	03-07							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	0.011	0.011	0.006	0.017	0.005	0.27	0.012
Kauaeranga River @ Smiths Cableway/Recorder	12	0.010	0.004	0.002	0.042	0.003	<u>1.77</u>	0.005
Ohinemuri River @ Queens Head	12	0.024	0.024	0.007	0.045	0.013	0.27	0.030
Ohinemuri River @ SH25 Br	12	0.016	0.015	0.007	0.031	0.010	0.74	0.016
Tairua River @ Morrisons Br Hikuai	12	0.007	0.006	0.002	0.018	0.005	1.27	0.006
Tapu River @ Tapu-Coroglen Rd	12	0.012	0.003	0.002	0.084	0.006	<u>2.81</u>	0.004
Waiau River @ E309 Rd Ford	12	0.018	0.011	0.002	0.079	0.010	<u>2.25</u>	0.009
Waitekauri River @ U/S Ohinemuri Conflu	12	0.011	0.011	0.004	0.027	0.005	<u>1.72</u>	0.011
Waiwawa River @ SH25 Coroglen	12	0.025	0.007	0.002	0.160	0.021	<u>2.47</u>	0.006
Wharekawa River @ SH25	12	0.008	0.007	0.002	0.017	0.005	0.71	0.008
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.059	0.059	0.045	0.075	0.010	0.45	0.059
Oraka Stm @ Lake Rd	12	0.137	0.110	0.094	0.240	0.072	1.02	0.140
Piako River @ Kiwitahi	12	0.111	0.099	0.074	0.229	0.028	<u>1.89</u>	0.106
Piako River @ Paeroa-Tahuna Rd Br	4	0.466	0.501	0.266	0.597	0.167	-0.78	0.306
Piakonui Stm @ Piakonui Rd	12	0.028	0.025	0.017	0.054	0.011	1.38	0.028
Waihou River @ Okauia	12	0.092	0.092	0.075	0.108	0.013	-0.11	0.094
Waihou River @ Whites Rd	12	0.081	0.080	0.072	0.096	0.009	0.74	0.084
Waihohu Stm @ Waihohu Rd (Off SH5)	12	0.030	0.032	0.022	0.039	0.007	-0.20	0.033
Waiomou Stm @ Matamata-Tauranga Rd	12	0.053	0.044	0.037	0.150	0.008	<u>2.90</u>	0.048
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.097	0.098	0.056	0.134	0.021	-0.14	0.082
Waitoa River @ Landsdowne Rd Br	12	0.075	0.066	0.042	0.147	0.045	0.94	0.087
Waitoa River @ Mellon Rd Recorder	12	0.196	0.173	0.100	0.362	0.119	0.66	0.272
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otatau Rd Br opp Moseley Rd	12	0.089	0.078	0.034	0.290	0.045	<u>2.21</u>	0.062
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.020	0.019	0.008	0.052	0.009	<u>1.72</u>	0.013
Karapiro Stm @ Hickey Rd Bridge	12	0.111	0.104	0.075	0.182	0.026	1.25	0.103
Kirikiri Stm @ Tauhara Dr	12	0.080	0.078	0.055	0.119	0.016	0.84	0.083
Komakorau Stm @ Henry Rd	12	0.114	0.103	0.057	0.250	0.042	<u>1.80</u>	0.109
Little Waipa Stm @ Arapuni - Putaruru Rd	12	0.078	0.078	0.053	0.103	0.031	-0.13	0.078
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	0.402	0.419	0.079	0.795	0.257	0.28	0.428
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	0.700	0.673	0.343	1.030	0.286	0.01	0.580
Mangaone Stm @ Annebrooke Rd Br	12	0.177	0.171	0.147	0.251	0.045	1.03	0.184
Mangaonua Stm @ Hoeka Rd	12	0.070	0.071	0.030	0.126	0.041	0.34	0.069
Mangaonua Stm @ Te Miro Rd	12	0.041	0.036	0.026	0.079	0.012	1.40	0.036
Mangatangi River @ SH2 Maramarua	12	0.103	0.090	0.045	0.287	0.059	<u>2.00</u>	0.094
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.030	0.029	0.012	0.052	0.009	0.51	0.027
Mangawara Stm @ Rutherford Rd Br	12	0.234	0.233	0.141	0.320	0.082	-0.05	0.241
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.255	0.197	0.152	0.571	0.102	1.52	0.177
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.134	0.137	0.076	0.226	0.041	0.64	0.122
Ohaeroa Stm @ SH22 Br	12	0.047	0.046	0.033	0.059	0.015	0.06	0.038
Opuatia Stm @ Ponganui Rd	12	0.042	0.037	0.015	0.092	0.017	1.31	0.033
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	0.129	0.125	0.092	0.182	0.037	0.51	0.145
Waerenga Stm @ Taniwha Rd	12	0.062	0.058	0.037	0.099	0.020	0.60	0.055
Waitawhirihiri Stm @ Edgecumbe Street	12	0.119	0.110	0.073	0.200	0.068	0.78	0.119
Whakapipi Stm @ SH22 Br	12	0.072	0.076	0.033	0.110	0.044	-0.11	0.060
Whakauru Stm @ U/S SH1 Br	12	0.041	0.040	0.031	0.055	0.015	0.35	0.034
Whangamarino River @ Island Block Rd	12	0.159	0.149	0.127	0.220	0.045	0.91	0.170
Whangamarino River @ Jefferies Rd Br	12	0.103	0.106	0.061	0.146	0.029	0.06	0.101
Whangape Stm @ Rangiriri-Glen Murray Rd	12	0.137	0.103	0.064	0.407	0.084	<u>1.92</u>	0.129

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Waipa River and Tributaries								
Kaniwhaniwha Stm @ Wright Rd	12	0.007	0.007	0.004	0.011	0.003	0.78	0.007
Mangaohoi Stm @ South Branch Maru Rd	12	0.044	0.049	0.017	0.057	0.016	-0.97	0.043
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	0.017	0.015	0.009	0.031	0.011	0.81	0.016
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	0.237	0.194	0.076	0.608	0.164	1.18	0.114
Mangapu River @ Otorohanga	12	0.050	0.050	0.018	0.084	0.053	0.01	0.036
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	0.009	0.009	0.006	0.012	0.003	0.12	0.011
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	0.003	0.002	0.002	0.006	0.001	1.43	0.004
Ohote Stm @ Whatawhata/Horotiu Rd	12	0.026	0.024	0.008	0.042	0.020	0.09	0.018
Puniu River @ Bartons Corner Rd Br	12	0.027	0.028	0.016	0.036	0.013	-0.30	0.025
Waipa River @ Mangaokewa Rd	12	0.006	0.005	0.002	0.010	0.004	0.40	0.008
Waipa River @ Pirongia-Ngutunui Rd Br	12	0.024	0.023	0.015	0.036	0.009	0.46	0.020
Waipa River @ SH3 Otorohanga	12	0.009	0.009	0.006	0.011	0.003	0.24	0.009
Waitomo Stm @ SH31 Otorohanga	12	0.006	0.007	0.002	0.010	0.002	-0.28	0.007
Waitomo Stm @ Tumutumu Rd	12	0.008	0.008	0.006	0.012	0.002	0.76	0.009

12	0.029	0.029	0.015	0.045	0.008	0.00	0.030
12	0.056	0.057	0.021	0.074	0.015	-1.05	0.057
12	0.047	0.044	0.031	0.107	0.014	<u>2.35</u>	0.042
12	0.375	0.345	0.188	0.749	0.140	1.27	0.283
12	0.092	0.092	0.056	0.155	0.041	0.71	0.090
12	0.031	0.028	0.017	0.062	0.011	1.44	0.033
12	0.008	0.009	0.002	0.011	0.002	-1.41	0.008
12	0.092	0.088	0.048	0.186	0.041	1.10	0.094
12	0.059	0.059	0.041	0.077	0.018	-0.03	0.058
12	0.025	0.025	0.015	0.042	0.007	0.89	0.023
12	0.066	0.065	0.041	0.134	0.025	1.63	0.065
12	0.038	0.028	0.018	0.160	0.010	<u>2.86</u>	0.030
12	0.040	0.030	0.013	0.100	0.030	1.19	0.039
12	0.028	0.021	0.016	0.058	0.015	1.22	0.029

Tributaries to the upper Waikato River								
Kawaunui Stm @ SH5 Br	12	0.161	0.162	0.056	0.350	0.124	0.69	0.109
Mangaharakeke Stm (Aitiamuri) @ SH30 (Off Jct SH1)	12	0.033	0.032	0.027	0.041	0.005	0.31	0.037
Mangakara Stm (Reporoa) @ SH5	12	0.057	0.054	0.043	0.094	0.007	<u>2.17</u>	0.057
Mangakino Stm (Whakamaru) @ Sandel Rd	12	0.044	0.044	0.034	0.054	0.015	0.04	0.042
Otamakokore Stm @ Hossack Rd	12	0.153	0.152	0.136	0.172	0.009	0.45	0.152
Pueto Stm @ Broadlands Rd Br	12	0.086	0.088	0.074	0.100	0.010	-0.02	0.085
Tahunaatara Stm @ Ohakuri Rd	12	0.034	0.034	0.029	0.043	0.006	0.70	0.036
Torepatutahi Stm @ Vaile Rd Br	12	0.081	0.083	0.042	0.091	0.007	<u>-2.54</u>	0.086
Waiotapu Stm @ Campbell Rd Br	12	0.002	0.002	0.002	0.007	0.000	<u>3.02</u>	0.002
Waiotapu Stm @ Homestead Rd Br	12	0.046	0.046	0.031	0.082	0.007	<u>1.93</u>	0.042
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	0.085	0.082	0.068	0.110	0.014	0.87	0.079
Whirinaki Stm @ Corbett Rd	12	0.065	0.065	0.057	0.072	0.005	-0.31	0.070

12	0.239	0.240	0.084	0.470	0.134	0.43	0.195
12	0.055	0.057	0.040	0.063	0.007	-1.18	0.059
12	0.084	0.083	0.053	0.146	0.015	1.64	0.092
12	0.053	0.054	0.043	0.065	0.013	-0.05	0.052
12	0.194	0.188	0.173	0.268	0.012	<u>2.01</u>	0.180
12	0.108	0.110	0.096	0.119	0.014	-0.20	0.107
12	0.058	0.057	0.045	0.082	0.009	1.16	0.054
12	0.104	0.100	0.087	0.168	0.006	<u>2.48</u>	0.107
12	0.160	0.157	0.108	0.273	0.066	0.98	0.138
12	0.180	0.159	0.100	0.393	0.100	1.49	0.172
12	0.118	0.119	0.103	0.150	0.016	1.07	0.116
12	0.071	0.071	0.066	0.076	0.006	0.11	0.072

West Coast								
Awakino River @ Gribbon Rd	12	0.012	0.013	0.002	0.017	0.007	-0.60	0.015
Awakino River @ SH3 Awakau Rd Junction	12	0.009	0.010	0.002	0.034	0.011	1.62	0.010
Manganui River @ Off Manganui Rd	12	0.011	0.010	0.002	0.032	0.011	1.11	0.013
Mangaotaki River @ SH3 Br	12	0.013	0.012	0.007	0.022	0.010	0.54	0.013
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	0.015	0.016	0.008	0.021	0.006	-0.17	0.015
Mokau River @ Awakau Rd	12	0.008	0.008	0.002	0.010	0.003	-1.15	0.008
Mokau River @ Mangaokewa Rd (Off SH30)	12	0.019	0.019	0.010	0.037	0.012	0.81	0.017
Mokau River @ Totoro Rd Recorder	12	0.013	0.012	0.008	0.023	0.007	0.98	0.012
Mokauti Stm @ Three Way Point - Aria	12	0.020	0.011	0.005	0.121	0.011	<u>2.90</u>	0.008
Ohautira Stm @ Waingaro Te Uku Rd	12	0.023	0.023	0.014	0.030	0.008	-0.25	0.020
Oparau River @ Langdon Rd (Off Okupata Rd)	12	0.004	0.005	0.002	0.008	0.004	0.43	0.007
Tawarau River @ Off Speedies Rd	12	0.016	0.015	0.011	0.028	0.005	1.26	0.015
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	0.014	0.012	0.008	0.026	0.008	0.91	0.011
Waitetuna River @ Te Uku-Waingaro Rd	12	0.009	0.008	0.006	0.017	0.004	1.27	0.012

12	0.023	0.022	0.012	0.056	0.010	<u>1.88</u>	0.021
12	0.048	0.025	0.010	0.183	0.022	<u>1.71</u>	0.024
12	0.055	0.031	0.010	0.275	0.042	<u>2.58</u>	0.035
12	0.040	0.033	0.016	0.092	0.015	1.46	0.036
12	0.046	0.029	0.022	0.142	0.029	<u>2.01</u>	0.030
12	0.095	0.044	0.025	0.328	0.064	1.56	0.053
12	0.040	0.038	0.028	0.059	0.012	0.82	0.038
12	0.053	0.038	0.025	0.164	0.012	<u>1.88</u>	0.042
12	0.076	0.050	0.026	0.195	0.039	1.44	0.053
12	0.050	0.045	0.033	0.114	0.013	<u>2.24</u>	0.045
12	0.017	0.018	0.007	0.026	0.012	-0.20	0.019
12	0.039	0.032	0.019	0.087	0.021	1.42	0.032
12	0.053	0.043	0.027	0.120	0.018	1.46	0.047
12	0.040	0.032	0.022	0.107	0.015	<u>2.17</u>	0.040

Inflows to Lake Taupo								
Hinemaiaia River @ SH1	12	0.029	0.030	0.020	0.036	0.009	-0.46	0.030
Kuratau River @ 43 Te Rae Street	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002
Kuratau River @ SH41 Moerangi	12	0.006	0.002	0.002	0.021	0.006	1.37	0.008
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	0.132	0.131	0.120	0.148	0.008	0.67	0.143
Tauranga-Taupo River @ Te Kono Slackline	12	0.013	0.013	0.005	0.020	0.005	-0.11	0.015
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002
Tokaanu Stm @ Off SH41 Turangi	12	0.076	0.079	0.060	0.082	0.006	-1.43	0.079
Waihaha River @ SH32	12	0.021	0.022	0.010	0.029	0.011	-0.29	0.020
Waitahanui River @ Blake Rd	12	0.046	0.047	0.037	0.053	0.008	-0.39	0.048
Whanganui Stm @ Lakeside Lake Taupo	12	0.008	0.009	0.002	0.014	0.006	-0.39	0.010
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	0.020	0.021	0.006	0.028	0.009	-0.70	0.023
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	0.018	0.018	0.008	0.024	0.011	-0.30	0.021

12	0.041	0.039	0.031	0.057	0.010	0.64	0.038
12	0.006	0.005	0.002	0.013	0.003	1.20	0.006
12	0.018	0.017	0.010	0.028	0.011	0.35	0.015
12	0.175	0.177	0.130	0.221	0.022	0.03	0.177
12	0.022	0.019	0.016	0.038	0.008	1.45	0.021
12	0.014	0.013	0.008	0.019	0.007	0.06	0.014
12	0.081	0.080	0.064	0.101	0.007	0.39	0.081
12	0.027	0.028	0.021	0.038	0.007	0.49	0.025
12	0.050	0.050	0.040	0.059	0.006	-0.05	0.050
12	0.020	0.021	0.014	0.030	0.007	0.42	0.017
12	0.036	0.037	0.024	0.043	0.008	-0.77	0.037
12	0.034	0.034	0.028	0.041	0.007	0.18	0.034

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Ammoniacal Nitrogen (g N m⁻³)

Location	03-07							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	0.01	0.01	0.01	0.02	0.01	<u>1.92</u>	0.01
Kauaeranga River @ Smiths Cableway/Recorder	12	0.01	0.01	0.01	0.01	0.00	<u>1.79</u>	0.01
Ohinemuri River @ Queens Head	12	0.03	0.03	0.01	0.08	0.04	0.62	0.03
Ohinemuri River @ SH25 Br	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01
Tairua River @ Morrissons Br Hikuai	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01
Tapu River @ Tapu-Coroglen Rd	12	0.01	0.01	0.01	0.02	0.00	<u>2.56</u>	0.01
Waiau River @ E309 Rd Ford	12	0.01	0.01	0.01	0.01	0.00	1.15	0.01
Waitekauri River @ U/S Ohinemuri Conflu	12	0.01	0.01	0.01	0.02	0.01	<u>1.69</u>	0.01
Waiwawa River @ SH25 Coroglen	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01
Wharekawa River @ SH25	12	0.01	0.01	0.01	0.02	0.00	<u>2.21</u>	0.01
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.01	0.01	0.01	0.03	0.00	<u>1.95</u>	0.01
Oraka Stm @ Lake Rd	12	0.14	0.03	0.01	0.74	0.05	<u>1.82</u>	0.03
Piako River @ Kiwitahi	12	0.04	0.02	0.01	0.12	0.07	0.92	0.05
Piako River @ Paeroa-Tahuna Rd Br	4	0.06	0.02	0.01	0.20	0.11	1.11	0.08
Piakonui Stm @ Piakonui Rd	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01
Waihou River @ Okauia	12	0.01	0.01	0.01	0.04	0.02	1.49	0.01
Waihou River @ Whites Rd	12	0.01	0.01	0.01	0.02	0.00	<u>2.21</u>	0.01
Waihohotu Stm @ Waihohotu Rd (Off SH5)	12	0.01	0.01	0.01	0.01	0.00	1.15	0.01
Waiomou Stm @ Matamata-Tauranga Rd	12	0.02	0.01	0.01	0.04	0.02	0.77	0.02
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.05	0.04	0.01	0.14	0.04	1.43	0.03
Waitoa River @ Landsdowne Rd Br	12	0.04	0.04	0.01	0.11	0.06	0.55	0.05
Waitoa River @ Mellon Rd Recorder	12	0.19	0.02	0.01	1.24	0.21	<u>2.28</u>	0.08
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	0.14	0.09	0.01	0.91	0.10	<u>2.83</u>	0.04
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.04	0.03	0.02	0.07	0.02	0.76	0.03
Karapiro Stm @ Hickey Rd Bridge	12	0.03	0.03	0.01	0.09	0.03	0.93	0.02
Kirikiriira Stm @ Tauhara Dr	12	0.33	0.29	0.15	0.83	0.12	<u>1.87</u>	0.32
Komakorau Stm @ Henry Rd	12	0.74	0.75	0.28	1.14	0.58	-0.02	0.84
Little Waipa Stm @ Arapuni - Putaruru Rd	12	0.02	0.02	0.01	0.04	0.02	0.78	0.02
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	0.33	0.26	0.07	1.22	0.15	<u>2.44</u>	0.31
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	0.12	0.07	0.01	0.68	0.09	<u>2.59</u>	0.06
Mangaone Stm @ Annebrooke Rd Br	12	0.03	0.03	0.01	0.05	0.02	-0.32	0.03
Mangaonua Stm @ Hoeka Rd	12	0.08	0.09	0.01	0.14	0.05	-0.26	0.08
Mangaonua Stm @ Te Miro Rd	12	0.01	0.01	0.01	0.02	0.01	1.02	0.01
Mangatangi River @ SH2 Maramarua	12	0.03	0.01	0.01	0.21	0.02	<u>2.81</u>	0.01
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.01	0.01	0.01	0.06	0.01	<u>2.64</u>	0.01
Mangawara Stm @ Rutherford Rd Br	12	0.37	0.39	0.19	0.51	0.20	-0.16	0.40
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.11	0.10	0.02	0.26	0.11	0.73	0.11
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.09	0.06	0.01	0.34	0.08	<u>1.77</u>	0.05
Ohaeroa Stm @ SH22 Br	12	0.01	0.01	0.01	0.03	0.01	0.78	0.01
Opuatia Stm @ Ponganui Rd	12	0.01	0.01	0.01	0.04	0.01	1.43	0.01
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	0.01	0.01	0.01	0.02	0.01	1.06	0.01
Waerenga Stm @ Taniwha Rd	12	0.02	0.01	0.01	0.05	0.03	0.81	0.01
Waitawhiriwhiri Stm @ Edgecumbe Street	12	0.64	0.68	0.24	0.81	0.12	-1.66	0.68
Whakapipi Stm @ SH22 Br	12	0.03	0.01	0.01	0.22	0.01	<u>2.93</u>	0.01
Whakauru Stm @ U/S SH1 Br	12	0.01	0.01	0.01	0.02	0.01	0.68	0.01
Whangamarino River @ Island Block Rd	12	0.08	0.09	0.01	0.23	0.11	0.61	0.08
Whangamarino River @ Jefferies Rd Br	12	0.06	0.05	0.01	0.14	0.09	0.48	0.05
Whangape Stm @ Rangiriri-Glen Murray Rd	12	0.01	0.01	0.01	0.02	0.01	1.16	0.01

Nitrate/Nitrite (g m⁻³)

Location	03-07							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	0.055	0.022	0.003	0.256	0.054	<u>1.85</u>	0.033
Kauaeranga River @ Smiths Cableway/Recorder	12	0.025	0.019	0.003	0.103	0.016	<u>2.23</u>	0.018
Ohinemuri River @ Queens Head	12	0.817	1.030	0.064	1.200	0.601	-0.86	0.919
Ohinemuri River @ SH25 Br	12	0.426	0.386	0.053	0.805	0.397	0.05	0.482
Tairua River @ Morrissons Br Hikuai	12	0.030	0.018	0.001	0.107	0.047	1.26	0.023
Tapu River @ Tapu-Coroglen Rd	12	0.009	0.003	0.001	0.040	0.012	1.53	0.004
Waiau River @ E309 Rd Ford	12	0.066	0.039	0.002	0.321	0.056	<u>2.20</u>	0.045
Waitekauri River @ U/S Ohinemuri Conflu	12	0.127	0.103	0.006	0.338	0.142	0.66	0.125
Waiwawa River @ SH25 Coroglen	12	0.014	0.009	0.001	0.052	0.014	1.63	0.011
Wharekawa River @ SH25	12	0.063	0.040	0.005	0.185	0.085	0.95	0.046
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.300	0.273	0.219	0.416	0.104	0.45	0.332
Oraka Stm @ Lake Rd	12	2.034	1.905	1.760	2.800	0.400	1.35	1.995
Piako River @ Kiwitahi	12	1.070	0.570	0.220	3.180	1.399	1.08	0.972
Piako River @ Paeroa-Tahuna Rd Br	4	2.108	1.855	1.410	3.310	1.205	0.78	1.835
Piakonui Stm @ Piakonui Rd	12	0.221	0.150	0.124	0.577	0.130	1.59	0.244
Waihou River @ Okauia	12	1.090	1.015	0.957	1.340	0.207	0.74	1.140
Waihou River @ Whites Rd	12	0.656	0.652	0.610	0.685	0.029	-0.50	0.638
Waihohotu Stm @ Waihohotu Rd (Off SH5)	12	0.214	0.209	0.170	0.270	0.020	0.65	0.204
Waiomou Stm @ Matamata-Tauranga Rd	12	0.510	0.445	0.330	0.970	0.221	1.34	0.482
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.278	0.211	0.052	0.901	0.187	1.58	0.248
Waitoa River @ Landsdowne Rd Br	12	1.276	1.155	0.672	2.480	0.832	0.79	1.530
Waitoa River @ Mellon Rd Recorder	12	1.954	1.675	0.746	4.320	1.460	0.95	2.100
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	1.269	1.260	0.489	2.210	0.681	0.39	1.245
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.509	0.493	0.170	1.090	0.438	0.58	0.391
Karapiro Stm @ Hickey Rd Bridge	12	0.564	0.376	0.160	1.520	0.515	1.18	0.614
Kirikiriira Stm @ Tauhara Dr	12	0.894	0.865	0.465	1.690	0.392	1.06	1.015
Komakorau Stm @ Henry Rd	12	1.610	1.325	0.919	4.600	0.365	<u>2.75</u>	1.490
Little Waipa Stm @ Arapuni - Putaruru Rd	12	1.404	1.360	1.110	1.900	0.295	0.90	1.385
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	1.236	1.027	0.360	3.160	0.461	1.60	1.110
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	3.096	3.240	1.840	3.860	0.670	-0.84	2.855
Mangaone Stm @ Annebrooke Rd Br	12	2.323	2.415	1.600	2.740	0.280	-1.24	2.450
Mangaonua Stm @ Hoeka Rd	12	1.251	1.300	0.420	1.750	0.270	-1.35	1.330
Mangaonua Stm @ Te Miro Rd	12	0.529	0.319	0.186	1.240	0.575	0.91	0.476
Mangatangi River @ SH2 Maramarua	12	0.294	0.147	0.025	0.966	0.336	1.25	0.188
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.075	0.014	0.003	0.387	0.026	<u>1.77</u>	0.024
Mangawara Stm @ Rutherford Rd Br	12	1.044	0.820	0.668	2.410	0.248	<u>1.87</u>	0.927
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	1.835	1.715	1.450	3.260	0.310	<u>2.40</u>	1.670
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.801	0.721	0.356	1.630	0.383	1.10	0.734
Ohaeroa Stm @ SH22 Br	12	1.290	1.255	0.837	1.900	0.395	0.53	1.300
Opuatia Stm @ Ponganui Rd	12	0.632	0.595	0.403	0.902	0.246	0.31	0.658
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	1.568	1.470	1.280	2.110	0.465	0.73	1.570
Waerenga Stm @ Taniwha Rd	12	0.775	0.706	0.425	1.300	0.421	0.44	0.723
Waitawhiriwhiri Stm @ Edgecumbe Street	12	0.938	0.918	0.568	1.190	0.226	-0.35	0.893
Whakapipi Stm @ SH22 Br	12	3.329	3.335	1.740	6.300	<u>1.685</u>	0.75	3.535
Whakauru Stm @ U/S SH1 Br	12	0.102	0.089	0.061	0.174	0.058	0.70	0.079
Whangamarino River @ Island Block Rd	12	0.148	0.066	0.001	0.522	0.223	1.19	0.077
Whangamarino River @ Jefferies Rd Br	12	0.643	0.470	0.092	1.690	0.494	1.10	0.617
Whangape Stm @ Rangiriri-Glen Murray Rd	12	0.125	0.004	0.001	0.606	0.173	1.37	0.003

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Waipa River and Tributaries								
Kaniwhaniwha Stm @ Wright Rd	12	0.02	0.02	0.01	0.04	0.02	-0.03	0.02
Mangaohoi Stm @ South Branch Maru Rd	12	0.01	0.01	0.01	0.06	0.00	<u>2.67</u>	0.01
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	0.02	0.02	0.01	0.03	0.01	0.06	0.01
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	0.08	0.07	0.01	0.23	0.10	0.84	0.07
Mangapu River @ Otorohanga	12	0.03	0.03	0.01	0.06	0.02	0.06	0.03
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	0.02	0.02	0.01	0.04	0.02	0.51	0.01
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01
Ohote Stm @ Whatawhata/Horotiu Rd	12	0.05	0.04	0.02	0.12	0.05	0.87	0.04
Puniu River @ Bartons Corner Rd Br	12	0.03	0.02	0.01	0.09	0.02	<u>1.70</u>	0.02
Waipa River @ Mangaokewa Rd	12	0.01	0.01	0.01	0.02	0.00	<u>1.81</u>	0.01
Waipa River @ Pirongia-Ngutunui Rd Br	12	0.03	0.02	0.01	0.09	0.03	1.06	0.03
Waipa River @ SH3 Otorohanga	12	0.02	0.01	0.01	0.05	0.03	0.67	0.02
Waitomo Stm @ SH31 Otorohanga	12	0.02	0.02	0.01	0.04	0.02	0.40	0.02
Waitomo Stm @ Tumutumu Rd	12	0.01	0.01	0.01	0.02	0.01	1.37	0.01

12	0.301	0.225	0.058	0.766	0.287	0.99	0.284
12	0.281	0.267	0.129	0.503	0.180	0.58	0.315
12	0.477	0.415	0.171	0.937	0.325	0.44	0.484
12	1.737	1.615	0.782	3.100	1.160	0.54	1.800
12	0.766	0.772	0.260	1.210	0.282	-0.19	0.738
12	0.345	0.261	0.091	1.020	0.312	1.42	0.360
12	0.169	0.187	0.058	0.256	0.085	-0.66	0.185
12	0.547	0.268	0.026	1.560	0.957	0.74	0.624
12	0.619	0.486	0.282	1.460	0.542	1.07	0.618
12	0.358	0.331	0.220	0.616	0.167	0.83	0.356
12	0.571	0.470	0.140	1.160	0.455	0.55	0.613
12	0.393	0.329	0.141	0.872	0.354	0.77	0.402
12	0.502	0.484	0.204	0.754	0.228	-0.11	0.521
12	0.607	0.594	0.419	0.786	0.167	-0.07	0.616

Tributaries to the upper Waikato River								
Kawaunui Stm @ SH5 Br	12	0.31	0.19	0.01	0.95	0.51	0.73	0.04
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	0.01	0.01	0.01	0.02	0.01	1.43	0.01
Mangakara Stm (Reporoa) @ SH5	12	0.05	0.02	0.01	0.36	0.02	<u>2.95</u>	0.02
Mangakino Stm (Whakamaru) @ Sandel Rd	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01
Otamakokore Stm @ Hossack Rd	12	0.01	0.01	0.01	0.05	0.01	<u>2.11</u>	0.01
Pueto Stm @ Broadlands Rd Br	12	0.01	0.01	0.01	0.02	0.01	1.12	0.01
Tahunaatara Stm @ Ohakuri Rd	12	0.01	0.01	0.01	0.02	0.01	1.00	0.01
Torepatutahi Stm @ Vaile Rd Br	12	0.02	0.01	0.01	0.20	0.00	<u>2.98</u>	0.01
Waiotapu Stm @ Campbell Rd Br	12	0.81	0.83	0.68	0.92	0.09	-0.47	0.87
Waiotapu Stm @ Homestead Rd Br	12	0.19	0.17	0.01	0.41	0.18	0.40	0.31
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	0.01	0.01	0.01	0.02	0.00	<u>3.02</u>	0.01
Whirinaki Stm @ Corbett Rd	12	0.01	0.01	0.01	0.02	0.00	<u>3.02</u>	0.01

12	2.418	2.430	1.920	2.930	0.300	0.09	2.305
12	0.342	0.299	0.252	0.528	0.144	0.86	0.340
12	1.165	1.140	1.090	1.390	0.085	1.59	1.110
12	0.571	0.570	0.438	0.703	0.065	0.06	0.566
12	0.725	0.666	0.530	1.130	0.232	1.01	0.733
12	0.408	0.411	0.350	0.433	0.029	-1.27	0.392
12	0.537	0.506	0.399	0.773	0.124	0.98	0.505
12	0.468	0.387	0.320	1.300	0.090	<u>2.86</u>	0.403
12	0.920	0.912	0.834	1.010	0.110	0.04	0.790
12	1.263	1.350	0.424	1.450	0.110	<u>-2.67</u>	1.295
12	0.960	0.989	0.757	1.170	0.296	-0.07	0.782
12	0.673	0.660	0.620	0.736	0.045	0.51	0.645

West Coast								
Awakino River @ Gribbon Rd	12	0.01	0.01	0.01	0.02	0.00	<u>2.56</u>	0.01
Awakino River @ SH3 Awakau Rd Junction	12	0.01	0.01	0.01	0.05	0.01	<u>2.50</u>	0.01
Manganui River @ Off Manganui Rd	12	0.01	0.01	0.01	0.05	0.00	<u>2.53</u>	0.01
Mangaotaki River @ SH3 Br	12	0.01	0.01	0.01	0.03	0.01	1.32	0.01
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	0.01	0.01	0.01	0.02	0.01	1.06	0.01
Mokau River @ Awakau Rd	12	0.02	0.02	0.01	0.09	0.02	<u>2.26</u>	0.02
Mokau River @ Mangaokewa Rd (Off SH30)	12	0.01	0.01	0.01	0.02	0.00	<u>2.56</u>	0.01
Mokau River @ Totoro Rd Recorder	12	0.02	0.01	0.01	0.07	0.01	<u>2.29</u>	0.01
Mokauti Stm @ Three Way Point - Aria	12	0.03	0.02	0.01	0.11	0.01	<u>2.11</u>	0.02
Ohautira Stm @ Waingaro Te Uku Rd	12	0.01	0.01	0.01	0.01	0.01	-0.35	0.01
Oparau River @ Langdon Rd (Off Okupata Rd)	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01
Tawarau River @ Off Speedies Rd	12	0.01	0.01	0.01	0.02	0.00	<u>2.21</u>	0.01
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	0.02	0.01	0.01	0.05	0.01	1.45	0.01
Waitetuna River @ Te Uku-Waingaro Rd	12	0.02	0.02	0.01	0.03	0.01	0.38	0.02

12	0.122	0.136	0.025	0.208	0.137	-0.20	0.117
12	0.200	0.215	0.001	0.443	0.349	0.01	0.188
12	0.136	0.164	0.005	0.258	0.229	-0.12	0.118
12	0.700	0.712	0.425	0.973	0.324	-0.08	0.680
12	0.312	0.265	0.095	0.827	0.220	1.50	0.264
12	0.479	0.423	0.072	0.835	0.447	0.09	0.393
12	0.317	0.277	0.178	0.548	0.157	0.65	0.300
12	0.597	0.536	0.270	0.928	0.407	0.09	0.560
12	0.373	0.240	0.029	1.200	0.431	1.17	0.279
12	0.282	0.262	0.112	0.570	0.139	0.73	0.263
12	0.105	0.047	0.004	0.375	0.170	1.12	0.098
12	0.296	0.284	0.149	0.446	0.189	0.20	0.289
12	0.371	0.327	0.005	1.010	0.303	0.81	0.331
12	0.299	0.280	0.121	0.646	0.152	1.07	0.295

Inflows to Lake Taupo								
Hinemaiaia River @ SH1	12	0.01	0.01	0.01	0.02	0.01	1.03	0.01
Kuratau River @ 43 Te Rae Street	12	0.01	0.01	0.01	0.02	0.01	1.43	0.01
Kuratau River @ SH41 Moerangi	12	0.01	0.01	0.01	0.01	0.01	0.34	0.01
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	0.01	0.01	0.01	0.02	0.01	1.28	0.01
Tauranga-Taupo River @ Te Kono Slackline	12	0.01	0.01	0.01	0.03	0.00	<u>1.79</u>	0.01
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	12	0.01	0.01	0.01	0.03	0.01	<u>1.85</u>	0.01
Tokaanu Stm @ Off SH41 Turangi	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01
Waihaha River @ SH32	12	0.01	0.01	0.01	0.01	0.00	1.15	0.01
Waitahanui River @ Blake Rd	12	0.01	0.01	0.01	0.01	0.00	<u>1.79</u>	0.01
Whanganui Stm @ Lakeside Lake Taupo	12	0.01	0.01	0.01	0.02	0.01	<u>1.92</u>	0.01
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	0.01	0.01	0.01	0.03	0.01	<u>1.85</u>	0.01
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	0.01	0.01	0.01	0.02	0.01	<u>1.92</u>	0.01

12	0.055	0.042	0.017	0.111	0.066	0.56	0.059
12	0.083	0.073	0.051	0.128	0.051	0.48	0.088
12	0.620	0.595	0.390	1.000	0.337	0.61	0.514
12	0.710	0.704	0.616	0.796	0.120	0.05	0.706
12	0.067	0.064	0.053	0.084	0.019	0.23	0.057
12	0.004	0.003	0.001	0.010	0.006	0.62	0.001
12	0.384	0.383	0.356	0.415	0.030	0.13	0.395
12	0.107	0.104	0.079	0.143	0.022	0.51	0.110
12	0.443	0.442	0.420	0.466	0.028	-0.15	0.414
12	0.346	0.325	0.277	0.458	0.095	0.61	0.378
12	0.705	0.660	0.508	0.942	0.320	0.21	0.669
12	0.734	0.690	0.547	0.970	0.335	0.21	0.671

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Total Kjeldahl Nitrogen (g m⁻³)

Location	03-07							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	0.11	0.10	0.07	0.15	0.05	0.31	0.11
Kauaeranga River @ Smiths Cableway/Recorder	12	0.14	0.11	0.03	0.53	0.08	<u>2.17</u>	0.09
Ohinemuri River @ Queens Head	12	0.30	0.33	0.14	0.55	0.23	0.19	0.33
Ohinemuri River @ SH25 Br	12	0.17	0.18	0.03	0.31	0.10	0.20	0.13
Tairua River @ Morrisons Br Hikuai	12	0.11	0.11	0.03	0.21	0.10	0.18	0.10
Tapu River @ Tapu-Coroglen Rd	12	0.15	0.09	0.03	0.84	0.08	<u>2.82</u>	0.08
Waiau River @ E309 Rd Ford	12	0.18	0.12	0.05	0.76	0.13	<u>2.38</u>	0.09
Waitekauri River @ U/S Ohinemuri Conflu	12	0.14	0.14	0.03	0.28	0.08	0.40	0.13
Waiwawa River @ SH25 Coroglen	12	0.24	0.09	0.06	1.30	0.11	<u>2.34</u>	0.10
Wharekawa River @ SH25	12	0.11	0.12	0.07	0.18	0.04	0.57	0.12
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.15	0.15	0.10	0.22	0.07	0.28	0.14
Oraka Stm @ Lake Rd	12	0.43	0.31	0.16	1.13	0.34	1.22	0.35
Piako River @ Kiwitahi	12	0.55	0.47	0.29	1.07	0.39	0.89	0.49
Piako River @ Paeroa-Tahuna Rd Br	4	0.86	0.73	0.60	1.37	0.42	1.03	0.73
Piakonui Stm @ Piakonui Rd	12	0.30	0.19	0.11	1.01	0.18	<u>1.96</u>	0.19
Waihou River @ Okauia	12	0.21	0.21	0.13	0.27	0.09	-0.15	0.23
Waihou River @ Whites Rd	12	0.09	0.06	0.03	0.49	0.05	<u>2.83</u>	0.06
Waihotu Stm @ Waihotu Rd (Off SH5)	12	0.15	0.16	0.08	0.19	0.04	-0.88	0.16
Waiomou Stm @ Matamata-Tauranga Rd	12	0.19	0.21	0.08	0.28	0.07	-0.44	0.21
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.48	0.43	0.33	0.93	0.11	<u>1.69</u>	0.39
Waitoa River @ Landsdowne Rd Br	12	0.48	0.46	0.26	0.85	0.24	0.67	0.49
Waitoa River @ Mellon Rd Recorder	12	0.63	0.46	0.23	1.80	0.42	1.53	0.65
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	0.84	0.67	0.43	2.60	0.24	<u>2.64</u>	0.57
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.32	0.34	0.23	0.47	0.12	0.38	0.28
Karapiro Stm @ Hickey Rd Bridge	12	0.42	0.36	0.26	0.95	0.19	<u>1.71</u>	0.37
Kirikiri Stm @ Tauhara Dr	12	0.74	0.66	0.50	1.47	0.30	<u>1.69</u>	0.79
Komakorau Stm @ Henry Rd	12	1.75	1.75	1.01	2.58	1.03	0.19	1.94
Little Waipa Stm @ Arapuni - Putaruru Rd	12	0.20	0.19	0.11	0.32	0.10	0.49	0.21
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	1.35	1.45	0.46	2.44	1.09	0.14	1.44
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	0.54	0.51	0.05	1.27	0.16	1.24	0.51
Mangaone Stm @ Annebrooke Rd Br	12	0.55	0.53	0.38	0.82	0.12	1.01	0.53
Mangaonua Stm @ Hoeka Rd	12	0.47	0.44	0.15	0.87	0.25	0.31	0.43
Mangaonua Stm @ Te Miro Rd	12	0.34	0.30	0.15	1.06	0.17	<u>2.34</u>	0.24
Mangatangi River @ SH2 Maramarua	12	0.49	0.36	0.21	1.68	0.28	<u>2.25</u>	0.37
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.18	0.17	0.09	0.34	0.07	1.16	0.16
Mangawara Stm @ Rutherford Rd Br	12	1.20	1.10	0.69	1.88	0.51	0.60	1.25
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.87	0.77	0.53	1.96	0.36	<u>1.94</u>	0.77
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.77	0.67	0.47	1.40	0.39	0.97	0.57
Ohaeroa Stm @ SH22 Br	12	0.33	0.34	0.22	0.41	0.09	-0.35	0.29
Opuatia Stm @ Ponganui Rd	12	0.34	0.31	0.25	0.70	0.10	<u>2.19</u>	0.29
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	0.21	0.18	0.11	0.33	0.13	0.32	0.25
Waerenga Stm @ Taniwha Rd	12	0.30	0.29	0.20	0.55	0.10	1.65	0.24
Waitawhirihiri Stm @ Edgecumbe Street	12	1.29	1.34	0.82	1.48	0.19	-1.41	1.37
Whakapipi Stm @ SH22 Br	12	0.45	0.44	0.30	0.70	0.15	0.69	0.44
Whakauru Stm @ U/S SH1 Br	12	0.17	0.17	0.14	0.20	0.04	0.06	0.17
Whangamarino River @ Island Block Rd	12	1.70	1.70	1.30	2.42	0.51	0.54	1.57
Whangamarino River @ Jefferies Rd Br	12	0.55	0.51	0.33	0.95	0.28	0.72	0.45
Whangape Stm @ Rangiriri-Glen Murray Rd	12	2.21	1.38	0.54	6.27	2.52	1.17	1.64

Total Nitrogen (g m⁻³)

Location	03-07							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	0.16	0.13	0.08	0.34	0.07	1.34	0.17
Kauaeranga River @ Smiths Cableway/Recorder	12	0.17	0.13	0.03	0.55	0.11	<u>1.96</u>	0.12
Ohinemuri River @ Queens Head	12	1.12	1.30	0.21	1.60	0.81	-0.75	1.30
Ohinemuri River @ SH25 Br	12	0.59	0.61	0.08	0.94	0.25	-0.56	0.64
Tairua River @ Morrisons Br Hikuai	12	0.14	0.14	0.06	0.23	0.06	-0.05	0.14
Tapu River @ Tapu-Coroglen Rd	12	0.16	0.09	0.03	0.87	0.09	<u>2.81</u>	0.09
Waiau River @ E309 Rd Ford	12	0.24	0.16	0.08	1.08	0.14	<u>2.61</u>	0.14
Waitekauri River @ U/S Ohinemuri Conflu	12	0.27	0.30	0.04	0.44	0.17	-0.58	0.27
Waiwawa River @ SH25 Coroglen	12	0.26	0.12	0.07	1.32	0.11	<u>2.32</u>	0.11
Wharekawa River @ SH25	12	0.18	0.16	0.08	0.35	0.07	1.20	0.17
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.45	0.43	0.35	0.56	0.17	0.17	0.47
Oraka Stm @ Lake Rd	12	2.47	2.18	1.94	3.79	0.66	1.19	2.39
Piako River @ Kiwitahi	12	1.62	0.94	0.57	4.25	1.65	1.05	1.69
Piako River @ Paeroa-Tahuna Rd Br	4	2.96	2.54	2.10	4.68	1.47	1.00	2.79
Piakonui Stm @ Piakonui Rd	12	0.52	0.38	0.27	1.14	0.32	1.25	0.47
Waihou River @ Okauia	12	1.30	1.24	1.09	1.60	0.29	0.53	1.38
Waihou River @ Whites Rd	12	0.75	0.71	0.64	1.16	0.05	<u>2.68</u>	0.68
Waihotu Stm @ Waihotu Rd (Off SH5)	12	0.36	0.37	0.29	0.41	0.04	-0.53	0.37
Waiomou Stm @ Matamata-Tauranga Rd	12	0.71	0.66	0.43	1.23	0.32	0.95	0.78
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.76	0.63	0.39	1.83	0.28	<u>1.97</u>	0.63
Waitoa River @ Landsdowne Rd Br	12	1.76	1.49	1.01	3.33	0.85	1.18	2.15
Waitoa River @ Mellon Rd Recorder	12	2.59	2.13	1.06	6.12	1.59	1.32	2.75
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	2.10	2.01	1.07	3.90	1.13	0.80	1.97
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.83	0.86	0.41	1.46	0.47	0.37	0.65
Karapiro Stm @ Hickey Rd Bridge	12	0.98	0.77	0.45	2.06	0.82	0.81	0.96
Kirikiri Stm @ Tauhara Dr	12	1.64	1.62	0.97	3.16	0.61	1.53	1.88
Komakorau Stm @ Henry Rd	12	3.36	3.13	2.24	7.18	1.15	<u>2.15</u>	3.30
Little Waipa Stm @ Arapuni - Putaruru Rd	12	1.60	1.53	1.26	2.18	0.40	0.81	1.56
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	2.59	2.35	0.82	5.19	1.59	0.66	2.58
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	3.63	3.69	2.27	5.13	0.65	0.06	3.35
Mangaone Stm @ Annebrooke Rd Br	12	2.87	2.92	2.38	3.34	0.27	-0.18	2.99
Mangaonua Stm @ Hoeka Rd	12	1.73	1.73	0.57	2.35	0.40	-1.43	1.80
Mangaonua Stm @ Te Miro Rd	12	0.87	0.73	0.36	1.58	0.83	0.48	0.72
Mangatangi River @ SH2 Maramarua	12	0.79	0.53	0.24	2.65	0.70	<u>1.74</u>	0.59
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.25	0.20	0.09	0.73	0.08	<u>1.71</u>	0.20
Mangawara Stm @ Rutherford Rd Br	12	2.24	1.97	1.43	4.29	0.65	1.53	2.21
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	2.71	2.42	2.07	5.22	0.57	<u>2.35</u>	2.45
Matahuru Stm @ Waiterimu Road Below Confluence	12	1.57	1.44	0.88	2.68	0.97	0.54	1.38
Ohaeroa Stm @ SH22 Br	12	1.62	1.60	1.12	2.20	0.39	0.40	1.59
Opuatia Stm @ Ponganui Rd	12	0.98	0.96	0.69	1.33	0.30	0.26	1.00
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	1.78	1.71	1.45	2.42	0.53	0.67	1.84
Waerenga Stm @ Taniwha Rd	12	1.07	0.98	0.71	1.68	0.48	0.67	1.04
Waitawhirihiri Stm @ Edgecumbe Street	12	2.23	2.28	1.39	2.63	0.22	-1.49	2.28
Whakapipi Stm @ SH22 Br	12	3.78	3.73	2.29	6.67	1.79	0.75	4.01
Whakauru Stm @ U/S SH1 Br	12	0.27	0.26	0.20	0.37	0.08	0.54	0.25
Whangamarino River @ Island Block Rd	12	1.85	1.95	1.30	2.42	0.59	-0.06	1.79
Whangamarino River @ Jefferies Rd Br	12	1.19	0.90	0.58	2.64	0.62	1.30	1.15
Whangape Stm @ Rangiriri-Glen Murray Rd	12	2.33	1.54	1.06	6.27	2.43	1.29	1.68

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Waipa River and Tributaries

Kaniwhaniwha Stm @ Wright Rd	12	0.20	0.22	0.11	0.32	0.08	0.24	0.21
Mangaohoi Stm @ South Branch Maru Rd	12	0.17	0.16	0.09	0.30	0.11	0.64	0.15
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	0.27	0.24	0.17	0.65	0.12	<u>2.21</u>	0.25
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	0.80	0.67	0.42	1.79	0.35	1.52	0.70
Mangapu River @ Otorohanga	12	0.35	0.32	0.23	0.76	0.09	<u>2.36</u>	0.31
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	0.21	0.20	0.12	0.34	0.12	0.37	0.20
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	0.06	0.06	0.03	0.09	0.05	-0.18	0.06
Ohote Stm @ Whatawhata/Horotiu Rd	12	0.83	0.78	0.62	1.16	0.21	0.71	0.79
Puniu River @ Bartons Corner Rd Br	12	0.30	0.26	0.17	0.52	0.18	0.84	0.27
Waipa River @ Mangaokewa Rd	12	0.21	0.22	0.10	0.34	0.09	0.30	0.20
Waipa River @ Pirongia-Ngutunui Rd Br	12	0.32	0.27	0.17	0.66	0.12	1.42	0.27
Waipa River @ SH3 Otorohanga	12	0.21	0.20	0.11	0.51	0.09	<u>1.89</u>	0.21
Waitomo Stm @ SH31 Otorohanga	12	0.24	0.22	0.14	0.43	0.08	1.24	0.22
Waitomo Stm @ Tumutumu Rd	12	0.15	0.14	0.09	0.29	0.10	1.03	0.13

	12	0.50	0.41	0.22	1.00	0.34	0.82	0.50
	12	0.45	0.45	0.28	0.80	0.18	0.84	0.46
	12	0.75	0.64	0.35	1.32	0.28	0.64	0.77
	12	2.54	2.40	1.28	4.89	1.34	0.96	2.61
	12	1.11	1.09	0.49	1.59	0.37	-0.16	1.09
	12	0.55	0.39	0.27	1.25	0.44	1.10	0.55
	12	0.22	0.24	0.08	0.34	0.11	-0.47	0.24
	12	1.38	1.27	0.69	2.35	1.01	0.50	1.45
	12	0.92	0.72	0.47	1.98	0.73	0.99	0.92
	12	0.57	0.57	0.40	0.83	0.16	0.61	0.61
	12	0.89	0.72	0.31	1.68	0.63	0.59	0.93
	12	0.61	0.49	0.26	1.14	0.55	0.58	0.66
	12	0.74	0.67	0.35	1.17	0.29	0.27	0.77
	12	0.76	0.71	0.60	1.08	0.23	0.86	0.74

Tributaries to the upper Waikato River

Kawaunui Stm @ SH5 Br	12	0.79	0.74	0.23	1.70	0.80	0.45	0.46
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	0.16	0.16	0.11	0.25	0.05	0.91	0.18
Mangakara Stm (Reporoa) @ SH5	12	0.33	0.25	0.16	1.11	0.09	<u>2.65</u>	0.29
Mangakino Stm (Whakamaru) @ Sandel Rd	12	0.11	0.10	0.07	0.20	0.04	0.98	0.12
Otamakokore Stm @ Hossack Rd	12	0.28	0.20	0.14	1.04	0.09	<u>2.70</u>	0.26
Pueto Stm @ Broadlands Rd Br	12	0.11	0.11	0.08	0.17	0.06	0.32	0.10
Tahunaatara Stm @ Ohakuri Rd	12	0.19	0.17	0.14	0.29	0.07	0.85	0.19
Torepatutahi Stm @ Vaile Rd Br	12	0.13	0.11	0.07	0.48	0.04	<u>2.83</u>	0.11
Waiotapu Stm @ Campbell Rd Br	12	1.01	0.98	0.87	1.21	0.14	0.57	1.07
Waiotapu Stm @ Homestead Rd Br	12	0.47	0.40	0.12	0.81	0.39	0.28	0.63
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	0.18	0.17	0.11	0.38	0.09	1.52	0.17
Whirinaki Stm @ Corbett Rd	12	0.08	0.09	0.03	0.13	0.04	-0.58	0.09

	12	3.20	3.17	2.15	4.20	1.22	0.04	2.97
	12	0.50	0.47	0.38	0.70	0.17	0.66	0.55
	12	1.49	1.37	1.31	2.36	0.12	<u>2.20</u>	1.43
	12	0.69	0.66	0.61	0.88	0.08	1.47	0.68
	12	1.01	0.86	0.72	2.17	0.29	<u>2.09</u>	1.07
	12	0.52	0.52	0.43	0.58	0.07	-0.42	0.49
	12	0.72	0.65	0.55	1.05	0.21	0.87	0.76
	12	0.60	0.49	0.40	1.78	0.09	<u>2.91</u>	0.54
	12	1.93	1.93	1.78	2.06	0.10	-0.16	1.87
	12	1.74	1.73	0.54	2.23	0.42	-1.62	1.94
	12	1.14	1.24	0.88	1.33	0.33	-0.38	0.97
	12	0.76	0.76	0.65	0.85	0.06	0.09	0.74

West Coast

Awakino River @ Gribbon Rd	12	0.07	0.07	0.03	0.13	0.03	0.46	0.07
Awakino River @ SH3 Awakau Rd Junction	12	0.20	0.12	0.03	0.81	0.08	<u>1.81</u>	0.13
Manganui River @ Off Manganui Rd	12	0.14	0.09	0.05	0.57	0.04	<u>2.80</u>	0.11
Mangaotaki River @ SH3 Br	12	0.21	0.17	0.13	0.48	0.09	<u>1.80</u>	0.19
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	0.21	0.15	0.10	0.71	0.11	<u>2.37</u>	0.14
Mokau River @ Awakau Rd	12	0.43	0.28	0.07	1.29	0.23	1.50	0.29
Mokau River @ Mangaokewa Rd (Off SH30)	12	0.20	0.18	0.13	0.35	0.08	1.10	0.20
Mokau River @ Totoro Rd Recorder	12	0.32	0.22	0.15	0.97	0.09	<u>2.02</u>	0.24
Mokauiti Stm @ Three Way Point - Aria	12	0.40	0.33	0.28	1.03	0.11	<u>2.48</u>	0.32
Ohautira Stm @ Waingaro Te Uku Rd	12	0.22	0.19	0.12	0.52	0.10	1.67	0.19
Oparau River @ Langdon Rd (Off Okupata Rd)	12	0.14	0.14	0.10	0.18	0.05	-0.05	0.13
Tawarau River @ Off Speedies Rd	12	0.19	0.15	0.08	0.39	0.10	1.09	0.14
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	0.31	0.30	0.16	0.60	0.16	0.94	0.27
Waitetuna River @ Te Uku-Waingaro Rd	12	0.21	0.20	0.11	0.49	0.08	<u>1.84</u>	0.21

	12	0.19	0.18	0.08	0.32	0.15	0.17	0.21
	12	0.40	0.33	0.09	1.14	0.35	1.11	0.38
	12	0.27	0.25	0.08	0.83	0.26	1.51	0.27
	12	0.91	0.91	0.58	1.24	0.39	0.01	0.91
	12	0.52	0.49	0.23	1.18	0.25	1.29	0.44
	12	0.91	0.73	0.26	2.12	0.56	1.05	0.78
	12	0.52	0.48	0.34	0.80	0.21	0.57	0.56
	12	0.91	0.77	0.48	1.89	0.49	1.11	0.83
	12	0.78	0.60	0.33	2.23	0.45	<u>2.00</u>	0.63
	12	0.50	0.47	0.27	0.90	0.26	0.77	0.48
	12	0.25	0.22	0.12	0.52	0.16	1.02	0.25
	12	0.48	0.55	0.29	0.68	0.27	-0.16	0.47
	12	0.69	0.67	0.20	1.54	0.51	0.86	0.64
	12	0.51	0.48	0.28	0.94	0.26	0.89	0.51

Inflows to Lake Taupo

Hinemaiaia River @ SH1	12	0.10	0.08	0.03	0.24	0.04	1.38	0.07
Kuratau River @ 43 Te Rae Street	12	0.10	0.09	0.06	0.20	0.02	<u>1.94</u>	0.08
Kuratau River @ SH41 Moerangi	12	0.16	0.16	0.11	0.23	0.05	0.50	0.15
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	0.22	0.23	0.14	0.27	0.07	-0.53	0.21
Tauranga-Taupo River @ Te Kono Slackline	12	0.05	0.05	0.03	0.09	0.05	0.32	0.03
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	12	0.10	0.12	0.03	0.14	0.04	-1.19	0.11
Tokaanu Stm @ Off SH41 Turangi	12	0.06	0.05	0.03	0.13	0.06	0.47	0.03
Waihaha River @ SH32	12	0.06	0.08	0.03	0.09	0.04	-0.78	0.07
Waitahanui River @ Blake Rd	12	0.08	0.07	0.06	0.13	0.03	1.06	0.06
Whanganui Stm @ Lakeside Lake Taupo	12	0.12	0.12	0.03	0.19	0.02	-0.75	0.12
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	0.20	0.17	0.13	0.44	0.07	<u>2.00</u>	0.16
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	0.17	0.16	0.11	0.26	0.06	0.69	0.17

	12	0.15	0.14	0.08	0.29	0.09	0.95	0.12
	12	0.18	0.17	0.14	0.26	0.05	1.05	0.17
	12	0.78	0.74	0.58	1.11	0.36	0.50	0.65
	12	0.93	0.91	0.81	1.06	0.18	0.16	0.91
	12	0.12	0.13	0.08	0.17	0.06	0.00	0.10
	12	0.11	0.12	0.03	0.15	0.05	-0.87	0.11
	12	0.44	0.44	0.39	0.50	0.05	0.17	0.44
	12	0.17	0.17	0.11	0.23	0.04	-0.07	0.18
	12	0.52	0.53	0.48	0.57	0.06	0.08	0.48
	12	0.47	0.44	0.30	0.65	0.08	0.35	0.50
	12	0.90	0.91	0.67	1.18	0.32	0.25	0.88
	12	0.90	0.85	0.69	1.20	0.32	0.38	0.87

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Turbidity (NTU)

Location	03-07							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	1.7	1.5	1.1	3.1	1.0	0.89	1.4
Kauaeranga River @ Smiths Cableway/Recorder	12	3.5	1.4	0.7	23.4	1.7	<u>2.87</u>	1.2
Ohinemuri River @ Queens Head	12	1.4	1.3	0.7	3.0	0.8	1.02	1.2
Ohinemuri River @ SH25 Br	12	1.2	1.1	0.5	2.9	0.5	1.62	1.0
Tairua River @ Morrisons Br Hikuai	12	2.0	1.4	1.0	5.6	1.2	<u>1.71</u>	1.4
Tapu River @ Tapu-Coroglen Rd	12	6.0	1.2	0.4	51.4	1.8	<u>2.87</u>	1.1
Waiau River @ E309 Rd Ford	12	10.1	2.6	1.8	45.0	9.7	<u>1.69</u>	2.6
Waitekauri River @ U/S Ohinemuri Conflu	12	1.3	1.1	0.5	3.3	1.0	1.40	1.0
Waiwawa River @ SH25 Coroglen	12	9.2	1.7	0.9	65.0	2.1	<u>2.40</u>	1.6
Wharekawa River @ SH25	12	3.8	3.9	2.0	6.5	2.0	0.44	2.6
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	7.1	6.6	3.3	16.3	3.1	1.42	6.5
Oraka Stm @ Lake Rd	12	5.1	3.5	1.8	12.8	4.8	1.14	4.5
Piako River @ Kiwitahi	12	4.1	3.4	1.5	9.4	3.9	0.71	4.6
Piako River @ Paeroa-Tahuna Rd Br	4	9.6	8.4	4.5	17.1	7.0	0.70	11.6
Piakonui Stm @ Piakonui Rd	12	3.9	3.4	1.6	8.3	1.7	1.24	3.9
Waihou River @ Okauia	12	4.8	3.8	1.8	10.0	4.0	0.64	3.8
Waihou River @ Whites Rd	12	0.4	0.3	0.2	1.2	0.2	<u>2.34</u>	0.4
Waihohu Stm @ Waihohu Rd (Off SH5)	12	4.2	3.9	3.2	6.2	1.5	0.83	5.1
Waiomou Stm @ Matamata-Tauranga Rd	12	6.0	3.7	1.8	29.7	2.5	<u>2.80</u>	3.6
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	11.0	8.8	3.2	39.3	6.6	<u>2.36</u>	9.3
Waitoa River @ Landsdowne Rd Br	12	4.8	3.6	1.3	11.5	4.7	0.84	5.6
Waitoa River @ Mellon Rd Recorder	12	6.4	4.2	1.0	16.8	7.9	0.90	7.1
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	25.9	15.9	5.4	140.0	8.4	<u>2.80</u>	13.0
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	9.5	7.7	2.6	21.2	7.6	0.79	5.4
Karapiro Stm @ Hickey Rd Bridge	12	7.2	7.3	2.7	11.1	5.7	-0.07	6.1
Kirikiriira Stm @ Tauhara Dr	12	24.3	23.3	11.4	37.0	12.4	0.07	29.1
Komakorau Stm @ Henry Rd	12	74.6	75.7	23.5	102.0	21.5	-0.92	76.9
Little Waipa Stm @ Arapuni - Putaruru Rd	12	2.5	1.6	0.6	6.9	2.6	1.09	1.5
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	20.0	20.9	7.9	32.0	9.9	-0.19	23.7
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	3.9	3.7	2.1	6.0	2.3	0.25	3.3
Mangaone Stm @ Annebrooke Rd Br	12	11.8	11.5	8.4	15.9	2.5	0.39	10.9
Mangaonua Stm @ Hoeka Rd	12	14.0	14.0	2.6	25.8	9.0	-0.01	11.4
Mangaonua Stm @ Te Miro Rd	12	4.5	4.0	2.4	11.0	1.7	<u>1.73</u>	4.4
Mangatangi River @ SH2 Maramarua	12	15.4	9.7	2.3	71.9	9.5	<u>2.31</u>	8.5
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	5.3	4.1	1.2	26.1	3.2	<u>2.66</u>	3.1
Mangawara Stm @ Rutherford Rd Br	12	43.4	42.5	18.4	62.0	18.5	-0.19	42.3
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	50.9	53.4	19.5	88.1	19.7	0.09	40.6
Matahuru Stm @ Waiterimu Road Below Confluence	12	36.0	35.5	6.2	81.6	21.8	0.68	32.0
Ohaeroa Stm @ SH22 Br	12	8.7	8.8	2.6	15.7	6.0	0.14	7.4
Opuatia Stm @ Ponganui Rd	12	13.8	12.1	3.8	39.2	8.3	<u>1.74</u>	9.7
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	2.8	2.0	1.4	6.5	2.5	1.01	2.4
Waerenga Stm @ Taniwha Rd	12	8.8	5.6	2.1	43.0	6.6	<u>2.58</u>	5.3
Waitawhirihiri Stm @ Edgecumbe Street	12	35.7	29.5	19.5	101.0	13.3	<u>2.53</u>	33.4
Whakapipi Stm @ SH22 Br	12	6.6	3.9	2.4	24.8	4.5	<u>2.07</u>	5.0
Whakauru Stm @ U/S SH1 Br	12	4.7	4.9	1.9	7.1	2.2	-0.28	3.6
Whangamarino River @ Island Block Rd	12	42.7	36.4	17.1	76.6	29.9	0.72	41.3
Whangamarino River @ Jefferies Rd Br	12	15.6	13.2	5.8	39.8	11.6	1.28	14.0
Whangape Stm @ Rangiriri-Glen Murray Rd	12	66.3	42.8	16.8	229.0	57.4	<u>1.73</u>	34.6

pH (pH units)

Location	03-07							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	7.3	7.5	6.6	7.7	0.6	-0.96	7.2
Kauaeranga River @ Smiths Cableway/Recorder	12	7.2	7.4	6.7	7.6	0.5	-0.55	7.1
Ohinemuri River @ Queens Head	12	7.3	7.3	6.6	7.7	0.6	-0.51	7.2
Ohinemuri River @ SH25 Br	12	7.2	7.2	6.5	7.6	0.2	-0.87	7.0
Tairua River @ Morrisons Br Hikuai	12	7.1	7.2	6.4	7.3	0.3	-1.57	6.9
Tapu River @ Tapu-Coroglen Rd	12	7.5	7.6	7.0	7.8	0.4	-0.67	7.5
Waiau River @ E309 Rd Ford	12	7.5	7.6	7.0	7.9	0.3	-0.30	7.4
Waitekauri River @ U/S Ohinemuri Conflu	12	7.2	7.3	6.6	7.5	0.3	-1.00	7.2
Waiwawa River @ SH25 Coroglen	12	7.2	7.3	6.5	7.5	0.3	-1.27	7.2
Wharekawa River @ SH25	12	7.0	7.1	6.4	7.3	0.3	-1.56	6.9
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	7.4	7.5	6.9	7.5	0.2	<u>-2.10</u>	7.4
Oraka Stm @ Lake Rd	12	7.3	7.4	6.8	7.5	0.2	-1.31	7.3
Piako River @ Kiwitahi	12	7.2	7.2	6.7	7.5	0.3	-0.28	7.1
Piako River @ Paeroa-Tahuna Rd Br	4	7.4	7.5	6.8	7.8	0.5	-0.76	7.3
Piakonui Stm @ Piakonui Rd	12	7.3	7.3	6.8	7.5	0.3	-0.94	7.3
Waihou River @ Okauia	12	7.3	7.3	7.0	7.5	0.2	-0.92	7.3
Waihou River @ Whites Rd	12	7.0	7.0	6.6	7.1	0.2	-1.13	7.0
Waihohu Stm @ Waihohu Rd (Off SH5)	12	7.3	7.4	6.9	7.4	0.1	<u>-1.72</u>	7.2
Waiomou Stm @ Matamata-Tauranga Rd	12	7.2	7.2	6.9	7.4	0.2	-0.62	7.2
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	7.2	7.2	6.6	7.4	0.2	<u>-1.77</u>	7.3
Waitoa River @ Landsdowne Rd Br	12	7.2	7.3	6.7	7.7	0.2	-0.20	7.2
Waitoa River @ Mellon Rd Recorder	12	7.3	7.3	6.7	7.9	0.5	-0.18	7.3
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	7.3	7.4	6.7	7.8	0.2	-0.39	7.3
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	7.6	7.7	6.9	8.1	0.3	-1.10	7.8
Karapiro Stm @ Hickey Rd Bridge	12	7.2	7.3	6.8	7.6	0.2	-0.68	7.3
Kirikiriira Stm @ Tauhara Dr	12	6.9	6.9	6.5	7.4	0.1	0.88	6.9
Komakorau Stm @ Henry Rd	12	6.6	6.7	6.1	7.0	0.4	-0.68	6.7
Little Waipa Stm @ Arapuni - Putaruru Rd	12	7.1	7.1	6.7	7.2	0.3	-1.06	7.1
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	7.0	7.1	6.5	7.4	0.3	-0.62	7.0
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	7.6	7.7	7.2	7.9	0.4	-0.70	7.5
Mangaone Stm @ Annebrooke Rd Br	12	7.3	7.3	7.0	7.6	0.3	0.01	7.3
Mangaonua Stm @ Hoeka Rd	12	7.1	7.1	6.8	7.4	0.3	0.12	7.0
Mangaonua Stm @ Te Miro Rd	12	7.4	7.5	6.8	7.8	0.4	-0.50	7.4
Mangatangi River @ SH2 Maramarua	12	7.1	7.2	6.6	7.4	0.3	-0.83	7.2
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	7.4	7.5	6.8	7.8	0.4	-0.50	7.4
Mangawara Stm @ Rutherford Rd Br	12	6.8	6.8	6.4	7.1	0.3	-0.42	6.9
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	7.1	7.1	6.5	7.6	0.2	-0.20	7.0
Matahuru Stm @ Waiterimu Road Below Confluence	12	7.1	7.2	6.6	7.3	0.3	-1.02	7.2
Ohaeroa Stm @ SH22 Br	12	7.6	7.6	7.0	8.1	0.3	-0.23	7.6
Opuatia Stm @ Ponganui Rd	12	7.7	7.7	7.1	7.9	0.2	-1.36	7.6
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	7.3	7.3	7.0	7.5	0.2	-0.66	7.3
Waerenga Stm @ Taniwha Rd	12	7.3	7.4	6.7	7.5	0.4	-1.03	7.3
Waitawhirihiri Stm @ Edgecumbe Street	12	7.0	7.0	6.6	7.5	0.2	0.45	7.0
Whakapipi Stm @ SH22 Br	12	7.4	7.4	6.9	7.6	0.2	-1.36	7.4
Whakauru Stm @ U/S SH1 Br	12	7.5	7.6	7.2	7.7	0.2	-0.90	7.4
Whangamarino River @ Island Block Rd	12	6.9	6.9	6.6	7.3	0.5	0.13	6.8
Whangamarino River @ Jefferies Rd Br	12	7.1	7.2	6.6	7.3	0.3	-1.19	7.1
Whangape Stm @ Rangiriri-Glen Murray Rd	12	8.0	8.0	7.0	9.0	0.9	0.05	7.6

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Waipa River and Tributaries

Kaniwhaniwha Stm @ Wright Rd	12	5.5	5.5	2.7	10.5	1.3	1.29	5.6
Mangaohoi Stm @ South Branch Maru Rd	12	2.4	2.3	0.7	3.8	1.5	-0.10	2.1
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	5.4	3.8	2.1	23.3	2.9	<u>2.63</u>	4.4
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	17.8	14.7	3.6	58.3	11.7	<u>1.74</u>	16.0
Mangapu River @ Otorohanga	12	11.1	6.3	2.1	50.5	6.8	<u>2.37</u>	9.5
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	5.3	3.5	1.3	18.0	4.0	<u>1.69</u>	3.4
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	1.4	1.3	0.3	4.5	0.6	<u>2.09</u>	1.3
Ohote Stm @ Whatawhata/Horotiu Rd	12	12.9	12.2	5.9	20.4	13.0	0.09	10.2
Puniu River @ Bartons Corner Rd Br	12	6.1	3.8	1.6	15.7	6.6	0.85	5.4
Waipa River @ Mangaokewa Rd	12	2.1	2.2	1.3	3.0	1.1	0.05	2.2
Waipa River @ Pirongia-Ngutunui Rd Br	12	10.7	7.5	2.6	31.3	6.6	1.43	10.6
Waipa River @ SH3 Otorohanga	12	6.1	2.3	0.1	40.8	2.3	<u>2.78</u>	3.9
Waitomo Stm @ SH31 Otorohanga	12	10.7	6.0	2.3	31.3	10.3	1.28	11.2
Waitomo Stm @ Tumutumu Rd	12	7.0	3.8	2.5	20.9	5.1	1.48	6.6

Tributaries to the upper Waikato River

Kawaunui Stm @ SH5 Br	12	4.7	5.1	1.7	7.1	1.3	-0.79	4.5
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	4.5	4.4	2.6	7.3	1.2	0.82	4.5
Mangakara Stm (Reporoa) @ SH5	12	5.8	5.3	2.9	11.1	4.5	0.60	5.0
Mangakino Stm (Whakamaru) @ Sandel Rd	12	1.2	1.3	0.5	2.4	0.6	0.82	1.4
Otamakokore Stm @ Hossack Rd	12	5.4	3.2	1.7	28.5	2.8	<u>2.84</u>	3.3
Pueto Stm @ Broadlands Rd Br	12	2.2	2.4	0.5	3.1	0.7	-1.24	2.3
Tahunaatara Stm @ Ohakuri Rd	12	2.7	2.4	1.5	4.6	1.2	0.92	2.6
Torepatutahi Stm @ Vaile Rd Br	12	1.5	0.8	0.6	7.4	0.5	<u>2.83</u>	1.0
Waiotapu Stm @ Campbell Rd Br	12	6.6	7.0	3.4	9.2	2.8	-0.39	5.8
Waiotapu Stm @ Homestead Rd Br	12	10.6	9.3	1.6	24.8	9.6	0.70	12.5
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	3.3	2.8	1.4	7.4	1.7	1.45	3.5
Whirinaki Stm @ Corbett Rd	12	0.5	0.4	0.3	1.0	0.1	1.64	0.5

West Coast

Awakino River @ Gribbon Rd	12	3.3	1.8	0.7	20.3	1.8	<u>2.85</u>	1.6
Awakino River @ SH3 Awakau Rd Junction	12	22.0	4.4	1.4	121.0	7.2	<u>1.81</u>	4.2
Manganui River @ Off Manganui Rd	12	19.6	5.0	2.1	148.0	9.8	<u>2.81</u>	5.8
Mangaotaki River @ SH3 Br	12	8.7	5.4	1.5	32.5	6.4	1.66	6.0
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	12.4	3.2	1.7	70.1	10.0	<u>2.26</u>	3.7
Mokau River @ Awakau Rd	12	56.9	16.1	4.6	301.0	27.0	<u>1.86</u>	18.5
Mokau River @ Mangaokewa Rd (Off SH30)	12	2.9	2.7	2.0	4.7	1.6	0.73	2.9
Mokau River @ Totoro Rd Recorder	12	15.6	6.1	1.7	77.2	6.9	<u>1.95</u>	8.4
Mokauiti Stm @ Three Way Point - Aria	12	21.2	12.8	4.6	67.6	18.4	1.41	14.2
Ohautira Stm @ Waingaro Te Uku Rd	12	15.6	9.3	4.3	65.4	8.1	<u>2.17</u>	10.8
Oparau River @ Langdon Rd (Off Okupata Rd)	12	3.5	2.5	1.7	8.1	2.7	1.15	3.0
Tawarau River @ Off Speedies Rd	12	6.5	3.3	1.4	18.0	8.5	0.96	4.0
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	18.6	7.8	4.2	82.8	10.8	<u>1.93</u>	11.4
Waitetuna River @ Te Uku-Waingaro Rd	12	13.7	8.6	4.7	51.4	7.6	<u>2.16</u>	9.2

Inflows to Lake Taupo

Hinemaiaia River @ SH1	12	1.1	1.1	0.7	1.7	0.3	0.70	1.1
Kuratau River @ 43 Te Rae Street	12	2.0	1.7	1.3	4.8	0.6	<u>2.47</u>	1.5
Kuratau River @ SH41 Moerangi	12	1.0	1.1	0.4	1.8	0.5	0.14	1.1
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	2.8	2.7	0.5	3.9	0.8	-1.49	2.8
Tauranga-Taupo River @ Te Kono Slackline	12	0.6	0.6	0.4	0.8	0.2	-0.50	0.7
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	12	1.0	1.1	0.6	1.3	0.3	-1.09	1.1
Tokaanu Stm @ Off SH41 Turangi	12	0.3	0.2	0.1	1.5	0.2	<u>2.10</u>	0.1
Waihaha River @ SH32	12	0.6	0.5	0.3	1.6	0.3	<u>1.98</u>	0.6
Waitahanui River @ Blake Rd	12	0.5	0.5	0.3	1.1	0.2	1.54	0.5
Whanganui Stm @ Lakeside Lake Taupo	12	1.8	1.3	1.0	4.5	1.0	1.54	1.3
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	3.1	2.3	0.8	8.0	2.3	1.24	2.8
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	2.8	2.3	1.6	5.6	1.0	1.39	2.3

12	7.1	7.2	6.7	7.5	0.2	-0.40	7.1
12	7.3	7.4	6.7	7.9	0.6	-0.11	7.3
12	7.3	7.3	6.9	7.7	0.5	0.09	7.3
12	7.3	7.4	6.5	8.1	0.9	-0.15	7.2
12	7.7	7.7	7.0	8.2	0.5	-0.39	7.7
12	7.1	7.2	6.6	7.7	0.5	-0.11	7.1
12	7.4	7.4	6.9	7.5	0.3	-1.41	7.3
12	6.8	6.8	6.4	7.2	0.3	0.15	6.7
12	7.1	7.2	6.6	7.6	0.6	-0.22	7.1
12	7.4	7.4	7.2	7.7	0.3	0.20	7.2
12	7.3	7.3	6.8	7.5	0.2	-1.07	7.2
12	7.4	7.5	7.1	7.6	0.4	-0.40	7.2
12	7.9	7.9	7.4	8.3	0.4	0.04	7.8
12	8.0	8.0	7.5	8.2	0.2	-0.83	7.9

12	7.0	7.0	6.7	7.3	0.3	-0.22	7.0
12	7.4	7.5	6.9	7.5	0.2	-1.64	7.4
12	7.1	7.2	6.8	7.3	0.2	-1.10	7.1
12	7.5	7.5	7.0	7.7	0.2	-1.32	7.4
12	8.1	8.2	7.7	8.3	0.3	-0.85	8.0
12	7.5	7.5	7.0	7.7	0.3	-0.93	7.5
12	7.6	7.7	7.0	7.8	0.3	-1.35	7.5
12	7.4	7.4	7.1	7.6	0.3	-0.50	7.4
12	5.8	5.8	5.5	6.0	0.1	-1.02	5.5
12	7.0	7.0	6.6	7.5	0.3	0.30	6.9
12	7.7	7.8	7.5	7.8	0.1	-1.30	7.7
12	7.3	7.3	7.0	7.5	0.3	-0.51	7.3

12	7.6	7.6	7.2	8.3	0.5	0.68	7.3
12	7.7	7.5	7.2	8.2	0.8	0.44	7.5
12	7.5	7.5	7.2	7.7	0.2	-0.42	7.4
12	7.7	7.8	7.3	8.0	0.3	-0.47	7.7
12	7.9	7.8	7.4	8.6	0.4	0.87	7.8
12	7.4	7.5	7.2	7.7	0.2	0.25	7.4
12	7.3	7.4	7.1	7.6	0.2	-0.14	7.2
12	7.7	7.7	7.4	8.0	0.3	0.10	7.6
12	7.4	7.4	6.9	7.7	0.4	-0.35	7.3
12	7.3	7.4	6.8	7.5	0.3	-0.97	7.3
12	7.5	7.6	7.0	7.8	0.5	-0.42	7.4
12	7.9	7.9	7.6	8.5	0.3	0.80	7.9
12	7.5	7.6	6.9	7.9	0.4	-0.87	7.4
12	7.3	7.3	6.8	7.5	0.2	-1.22	7.2

12	7.6	7.6	7.0	8.0	0.4	-0.53	7.4
12	7.1	7.2	6.8	7.7	0.2	0.67	7.0
12	7.5	7.5	7.1	7.9	0.3	-0.22	7.5
12	7.5	7.5	6.9	7.9	0.2	-0.94	7.5
12	7.5	7.6	7.0	8.0	0.3	-0.38	7.4
12	7.5	7.5	7.2	7.8	0.3	0.11	7.5
12	7.2	7.2	6.9	7.7	0.2	0.32	7.2
12	7.3	7.4	7.0	7.6	0.1	-0.71	7.2
12	7.6	7.6	7.1	8.0	0.1	-0.16	7.5
12	7.5	7.5	7.1	7.6	0.3	-1.02	7.4
12	7.5	7.6	7.1	7.7	0.2	-0.92	7.4
12	7.4	7.5	7.0	7.7	0.3	-1.00	7.4

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

E. Coli (n/100mL)

Location	03-07							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	4	943	870	230	1800	1415	0.07	235
Kauaeranga River @ Smiths Cableway/Recorder	4	343	87	1	1200	643	1.12	100
Ohinemuri River @ Queens Head	4	285	335	120	350	120	-1.14	320
Ohinemuri River @ SH25 Br	4	790	365	130	2300	1220	1.08	250
Tairua River @ Morrissons Br Hikuai	4	3437	340	68	13000	6606	1.15	125
Tapu River @ Tapu-Coroglen Rd	4	1176	144	17	4400	2298	1.15	100
Waiau River @ E309 Rd Ford	4	1293	1145	80	2800	2115	0.21	160
Waitekauri River @ U/S Ohinemuri Conflu	4	280	245	31	600	360	0.42	114
Waiwawa River @ SH25 Coroglen	4	3584	615	106	13000	6832	1.14	155
Wharekawa River @ SH25	4	1158	940	350	2400	1585	0.39	390
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	4	310	220	20	780	540	0.56	65
Oraka Stm @ Lake Rd	4	770	445	290	1900	830	1.12	670
Piako River @ Kiwitahi	4	4763	1440	170	16000	8875	1.10	610
Piako River @ Paeroa-Tahuna Rd Br	1	490	490	490	490	0	-	600
Piakonui Stm @ Piakonui Rd	4	702	90	29	2600	1306	1.15	90
Waihou River @ Okauia	4	290	295	110	460	200	-0.11	315
Waihou River @ Whites Rd	4	29	24	23	45	11	1.15	29
Waihohu Stm @ Waihohu Rd (Off SH5)	4	33	29	22	50	16	0.85	61
Waiomou Stm @ Matamata-Tauranga Rd	4	453	485	250	590	265	-0.34	400
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	4	575	510	180	1100	510	0.55	307
Waitoa River @ Landsdowne Rd Br	4	923	410	270	2600	1225	1.14	430
Waitoa River @ Mellon Rd Recorder	4	803	720	170	1600	905	0.40	625
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otatau Rd Br opp Moseley Rd	-	-	-	-	-	-	-	-
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	4	543	485	200	1000	615	0.28	425
Karapiro Stm @ Hickey Rd Bridge	4	2713	800	350	8900	4675	1.12	610
Kirikiri Stm @ Tauhara Dr	4	1203	985	340	2500	1495	0.53	645
Komakorau Stm @ Henry Rd	4	2950	2950	1300	4600	3000	0.00	1600
Little Waipa Stm @ Arapuni - Putaruru Rd	4	148	145	120	180	55	0.05	180
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	4	1500	1650	700	2000	700	-0.83	1400
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	4	878	560	190	2200	1045	1.02	715
Mangaone Stm @ Annebrooke Rd Br	4	3725	1350	1200	11000	4950	1.15	1200
Mangaonua Stm @ Hoeka Rd	4	6325	2850	1600	18000	8350	1.13	1400
Mangaonua Stm @ Te Miro Rd	4	758	400	230	2000	1005	1.08	280
Mangatangi River @ SH2 Maramarua	-	-	-	-	-	-	-	-
Mangatawhiri River @ Lyons Rd At Buckingham Br	-	-	-	-	-	-	-	-
Mangawara Stm @ Rutherford Rd Br	-	-	-	-	-	-	-	-
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	4	4775	2200	700	14000	7350	1.08	1300
Matahuru Stm @ Waiterimu Road Below Confluence	-	-	-	-	-	-	-	-
Ohaeroa Stm @ SH22 Br	-	-	-	-	-	-	-	-
Opuatia Stm @ Ponganui Rd	4	795	950	80	1200	710	-0.80	310
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	4	175	175	100	250	130	0.00	225
Waerenga Stm @ Taniwha Rd	3	1137	490	220	2700	1860	0.68	490
Waitawhirihiri Stm @ Edgecumbe Street	4	4500	1950	1100	13000	6600	1.11	1000
Whakapipi Stm @ SH22 Br	-	-	-	-	-	-	-	-
Whakauru Stm @ U/S SH1 Br	4	770	640	200	1600	1060	0.38	390
Whangamarino River @ Island Block Rd	-	-	-	-	-	-	-	-
Whangamarino River @ Jefferies Rd Br	-	-	-	-	-	-	-	-
Whangape Stm @ Rangiriri-Glen Murray Rd	-	-	-	-	-	-	-	-

Enterococci (n/100ml)

Location	03-07							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	4	920	730	20	2200	1761	0.27	65
Kauaeranga River @ Smiths Cableway/Recorder	4	153	70	1	470	305	0.88	40
Ohinemuri River @ Queens Head	4	47	29	1	130	88	0.71	10
Ohinemuri River @ SH25 Br	4	588	126	1	2100	1144	1.12	37
Tairua River @ Morrissons Br Hikuai	4	869	236	3	3000	1693	1.09	33
Tapu River @ Tapu-Coroglen Rd	4	1318	235	1	4800	2545	1.14	52
Waiau River @ E309 Rd Ford	4	1223	1245	1	2400	2355	0.00	77
Waitekauri River @ U/S Ohinemuri Conflu	4	72	34	1	220	131	0.98	13
Waiwawa River @ SH25 Coroglen	4	5407	305	18	21000	10616	1.15	54
Wharekawa River @ SH25	4	1420	630	21	4400	2560	1.02	61
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	4	133	138	18	240	174	-0.07	108
Oraka Stm @ Lake Rd	4	960	375	90	3000	1530	1.11	365
Piako River @ Kiwitahi	4	6873	700	90	26000	13065	1.15	290
Piako River @ Paeroa-Tahuna Rd Br	1	130	130	130	130	0	-	390
Piakonui Stm @ Piakonui Rd	4	714	29	1	2800	1413	1.15	43
Waihou River @ Okauia	4	168	150	90	280	115	0.64	145
Waihou River @ Whites Rd	4	24	24	8	40	17	0.07	20
Waihohu Stm @ Waihohu Rd (Off SH5)	4	161	17	9	600	303	1.15	15
Waiomou Stm @ Matamata-Tauranga Rd	4	235	245	120	330	160	-0.20	170
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	4	142	125	18	300	216	0.24	77
Waitoa River @ Landsdowne Rd Br	4	1205	395	30	4000	2150	1.11	180
Waitoa River @ Mellon Rd Recorder	4	273	265	130	430	195	0.17	310
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otatau Rd Br opp Moseley Rd	-	-	-	-	-	-	-	-
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	4	137	35	18	460	237	1.14	90
Karapiro Stm @ Hickey Rd Bridge	4	4400	260	80	17000	8600	1.15	240
Kirikiri Stm @ Tauhara Dr	4	1678	295	120	6000	3055	1.15	405
Komakorau Stm @ Henry Rd	4	1745	1800	480	2900	2110	-0.04	850
Little Waipa Stm @ Arapuni - Putaruru Rd	4	110	100	61	180	90	0.36	70
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	4	3953	380	50	15000	7525	1.15	475
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	4	366	180	5	1100	628	1.01	305
Mangaone Stm @ Annebrooke Rd Br	4	5278	890	330	19000	9445	1.15	550
Mangaonua Stm @ Hoeka Rd	4	8668	655	360	33000	16535	1.15	430
Mangaonua Stm @ Te Miro Rd	4	765	135	90	2700	1330	1.15	100
Mangatangi River @ SH2 Maramarua	-	-	-	-	-	-	-	-
Mangatawhiri River @ Lyons Rd At Buckingham Br	-	-	-	-	-	-	-	-
Mangawara Stm @ Rutherford Rd Br	-	-	-	-	-	-	-	-
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	4	2340	550	260	8000	4020	1.15	440
Matahuru Stm @ Waiterimu Road Below Confluence	-	-	-	-	-	-	-	-
Ohaeroa Stm @ SH22 Br	-	-	-	-	-	-	-	-
Opuatia Stm @ Ponganui Rd	4	80	55	11	200	120	0.79	82
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	4	89	74	30	180	102	0.58	52
Waerenga Stm @ Taniwha Rd	3	423	100	70	1100	773	0.71	100
Waitawhirihiri Stm @ Edgecumbe Street	4	2570	950	380	8000	4260	1.10	520
Whakapipi Stm @ SH22 Br	-	-	-	-	-	-	-	-
Whakauru Stm @ U/S SH1 Br	4	350	380	200	440	170	-0.59	290
Whangamarino River @ Island Block Rd	-	-	-	-	-	-	-	-
Whangamarino River @ Jefferies Rd Br	-	-	-	-	-	-	-	-
Whangape Stm @ Rangiriri-Glen Murray Rd	-	-	-	-	-	-	-	-

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Waipa River and Tributaries								
Kaniwhaniwha Stm @ Wright Rd	-	-	-	-	-	-	-	-
Mangaohoi Stm @ South Branch Maru Rd	4	122	54	11	370	186	1.10	55
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	-	-	-	-	-	-	-	-
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	-	-	-	-	-	-	-	-
Mangapu River @ Otorohanga	4	703	800	110	1100	595	-0.68	710
Mangatutu Stm (Waikeria) @ Walker Rd Br	4	568	615	140	900	445	-0.47	395
Mangauika Stm @ Te Awamutu Borough W/S Intake	4	15	14	3	27	22	0.02	11
Ohote Stm @ Whatawhata/Horotiu Rd	4	2280	650	120	7700	4140	1.12	175
Puniu River @ Bartons Corner Rd Br	-	-	-	-	-	-	-	-
Waipa River @ Mangaokewa Rd	-	-	-	-	-	-	-	-
Waipa River @ Pirongia-Ngutunui Rd Br	4	758	770	190	1300	785	-0.06	420
Waipa River @ SH3 Otorohanga	4	450	280	240	1000	400	1.14	360
Waitomo Stm @ SH31 Otorohanga	4	790	615	130	1800	1120	0.59	345
Waitomo Stm @ Tumutumu Rd	4	950	775	150	2100	1500	0.34	240

-	-	-	-	-	-	-	-	-
3	42	5	1	120	90	0.70	26	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
4	138	133	5	280	245	0.03	64	
3	370	200	110	800	518	0.66	180	
4	42	27	1	113	76	0.71	22	
4	940	620	20	2500	1820	0.54	76	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
4	440	220	19	1300	681	1.05	110	
4	114	110	5	230	133	0.13	115	
4	241	79	5	800	459	1.07	73	
4	275	160	1	780	530	0.73	57	

Tributaries to the upper Waikato River								
Kawaunui Stm @ SH5 Br	4	2403	1350	310	6600	3895	0.92	590
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	4	435	250	40	1200	580	1.03	275
Mangakara Stm (Reporoa) @ SH5	4	1028	545	420	2600	1145	1.14	450
Mangakino Stm (Whakamaru) @ Sandel Rd	-	-	-	-	-	-	-	-
Otamakokore Stm @ Hossack Rd	4	405	300	120	900	430	0.91	320
Pueto Stm @ Broadlands Rd Br	3	74	41	40	140	75	0.71	25
Tahunaatara Stm @ Ohakuri Rd	4	295	225	30	700	360	0.77	245
Torepatutahi Stm @ Vaile Rd Br	-	-	-	-	-	-	-	-
Waiotapu Stm @ Campbell Rd Br	4	6	6	1	10	9	-0.02	2
Waiotapu Stm @ Homestead Rd Br	-	-	-	-	-	-	-	-
Waipapa Stm (Mokai) @ Tirohanga Rd Br	4	392	163	43	1200	696	1.02	115
Whirinaki Stm @ Corbett Rd	-	-	-	-	-	-	-	-

4	1003	780	50	2400	1595	0.53	290
4	155	128	23	340	231	0.40	111
4	534	495	44	1100	633	0.28	190
-	-	-	-	-	-	-	-
4	205	195	100	330	200	0.09	110
3	27	34	11	36	19	-0.69	11
4	170	130	50	370	210	0.71	62
-	-	-	-	-	-	-	-
4	8	5	1	20	15	0.52	7
-	-	-	-	-	-	-	-
4	92	81	5	200	157	0.18	43
-	-	-	-	-	-	-	-

West Coast								
Awakino River @ Gribbon Rd	4	143	155	11	250	165	-0.30	180
Awakino River @ SH3 Awakau Rd Junction	4	313	310	110	520	295	0.03	220
Manganui River @ Off Manganui Rd	2	624	624	48	1200	1152	0.00	285
Mangaotaki River @ SH3 Br	-	-	-	-	-	-	-	-
Marokopa River @ Speedies Rd (Off Te Anga Rd)	4	3303	1060	90	11000	5895	1.11	205
Mokau River @ Awakau Rd	4	1030	775	70	2500	1840	0.42	315
Mokau River @ Mangaokewa Rd (Off SH30)	4	424	235	27	1200	742	0.88	200
Mokau River @ Totoro Rd Recorder	4	593	585	200	1000	465	0.07	460
Mokaiti Stm @ Three Way Point - Aria	4	643	575	320	1100	615	0.30	575
Ohautira Stm @ Waingaro Te Uku Rd	4	1038	775	200	2400	1625	0.50	535
Oparau River @ Langdon Rd (Off Okupata Rd)	-	-	-	-	-	-	-	-
Tawarau River @ Off Speedies Rd	-	-	-	-	-	-	-	-
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	-	-	-	-	-	-	-	-
Waitetuna River @ Te Uku-Waingaro Rd	4	663	555	240	1300	585	0.74	605

4	65	26	1	210	129	0.98	45
4	86	29	5	280	139	1.13	31
2	23	23	6	40	34	0.00	40
-	-	-	-	-	-	-	-
4	801	339	24	2500	1539	0.96	53
4	139	124	1	310	271	0.09	33
4	104	103	1	210	202	0.00	55
4	160	165	18	290	141	-0.17	165
4	188	195	1	360	275	-0.09	105
4	240	82	37	760	400	1.12	86
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4	442	70	26	1600	812	1.15	220

Inflows to Lake Taupo								
Hinemaiaia River @ SH1	4	14	14	5	24	15	0.10	21
Kuratau River @ 43 Te Rae Street	-	-	-	-	-	-	-	-
Kuratau River @ SH41 Moerangi	4	41	44	7	70	48	0	46
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	4	84	82	24	150	82	0.15	62
Tauranga-Taupo River @ Te Kono Slackline	-	-	-	-	-	-	-	-
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	-	-	-	-	-	-	-	-
Tokaanu Stm @ Off SH41 Turangi	-	-	-	-	-	-	-	-
Waihaha River @ SH32	4	19	17	2	40	32	0.13	5
Waitahanui River @ Blake Rd	4	15	15	12	20	6	0.51	22
Whanganui Stm @ Lakeside Lake Taupo	4	81	80	5	160	88	0.07	26
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	4	133	95	70	270	115	1.04	95
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	4	223	125	40	600	295	1.06	63

4	4	4	1	6	4	-0.40	3
-	-	-	-	-	-	-	-
4	44	32	4	110	80	0	18
4	108	46	22	320	154	1.13	41
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4	18	13	2	43	32	0.42	5
4	35	21	1	100	61	0.88	6
4	123	54	3	380	225	1.00	21
4	172	160	9	360	316	0.05	39
4	103	96	8	210	185	0.04	34

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Temperature (°C)

Location	Count	Mean	Median	Min	Max	IQR	Skew	03-07 Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	14.7	14.6	10.3	19.3	5.6	0.07	13.5
Kauaeranga River @ Smiths Cableway/Recorder	12	14.7	14.8	10.4	19.0	5.7	-0.10	14.1
Ohinemuri River @ Queens Head	12	16.7	16.7	11.2	23.9	6.5	0.34	16.2
Ohinemuri River @ SH25 Br	12	15.9	16.7	11.2	20.3	4.6	-0.19	15.8
Tairua River @ Morrisons Br Hikuai	12	15.8	16.8	11.1	21.1	5.1	-0.13	15.0
Tapu River @ Tapu-Coroglen Rd	12	14.5	14.7	10.4	19.1	5.1	0.04	14.2
Waiau River @ E309 Rd Ford	12	14.5	14.6	11.1	19.2	4.5	0.17	14.1
Waitekauri River @ U/S Ohinemuri Conflu	12	15.2	15.6	10.6	20.2	5.2	0.06	14.9
Waiwawa River @ SH25 Coroglen	12	14.5	14.6	10.7	19.8	4.5	0.17	14.2
Wharekawa River @ SH25	12	15.7	16.1	11.1	21.5	5.3	0.12	14.7
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	14.0	14.4	9.1	17.9	3.8	-0.38	14.1
Oraka Stm @ Lake Rd	12	14.1	15.1	10.4	16.7	5.0	-0.37	14.5
Piako River @ Kiwitahi	12	16.3	16.7	9.6	22.7	5.5	0.03	15.9
Piako River @ Paeroa-Tahuna Rd Br	4	16.8	17.9	9.9	21.5	7.2	-0.63	15.7
Piakonui Stm @ Piakonui Rd	12	13.1	13.3	9.0	17.6	3.3	0.22	12.9
Waihou River @ Okauia	12	14.3	14.7	10.0	17.3	4.9	-0.33	14.4
Waihou River @ Whites Rd	12	13.6	13.5	12.8	14.3	1.0	0.05	13.4
Waiohotu Stm @ Waiohotu Rd (Off SH5)	11	11.7	11.8	8.0	14.6	4.0	-0.27	11.3
Waiomou Stm @ Matamata-Tauranga Rd	12	13.8	13.9	9.0	17.4	5.9	-0.22	13.6
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	16.4	16.2	9.3	22.2	5.6	-0.28	16.2
Waitoa River @ Landsdowne Rd Br	12	15.8	16.7	9.4	21.5	5.3	-0.12	15.0
Waitoa River @ Mellon Rd Recorder	12	16.0	16.6	9.4	22.3	6.7	0.03	15.8
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otatau Rd Br opp Moseley Rd	12	17.7	17.4	9.6	24.6	7.7	-0.15	16.9
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	14.6	14.7	7.5	20.2	5.9	-0.17	14.6
Karapiro Stm @ Hickey Rd Bridge	12	15.2	15.5	9.2	20.2	4.0	-0.18	14.7
Kirikiri Stm @ Tauhara Dr	12	15.1	15.4	10.7	18.9	2.9	-0.21	15.1
Komakorau Stm @ Henry Rd	12	14.7	15.2	5.7	19.7	5.0	-0.83	14.7
Little Waipa Stm @ Arapuni - Putaruru Rd	12	14.3	15.0	11.6	16.7	3.3	-0.36	14.4
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	15.3	15.7	10.3	19.8	3.2	-0.19	15.4
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	14.3	14.9	9.1	18.6	6.6	-0.27	14.3
Mangaone Stm @ Annebrooke Rd Br	12	13.7	13.6	10.1	17.7	2.9	0.10	13.8
Mangaonua Stm @ Hoeka Rd	12	14.4	14.4	9.5	19.4	3.9	0.02	14.1
Mangaonua Stm @ Te Miro Rd	12	14.8	15.5	9.4	19.8	3.7	0.00	14.2
Mangatangi River @ SH2 Maramarua	12	16.3	16.3	10.1	21.5	6.2	-0.31	16.1
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	17.3	17.8	9.4	22.3	6.5	-0.51	17.1
Mangawara Stm @ Rutherford Rd Br	12	15.2	15.1	6.4	21.9	5.8	-0.27	14.9
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	14.4	14.7	10.4	17.9	2.3	-0.28	14.3
Matahuru Stm @ Waiterimu Road Below Confluence	12	14.9	15.0	5.8	21.5	6.5	-0.41	14.7
Ohaeroa Stm @ SH22 Br	12	14.8	15.3	7.9	20.0	4.8	-0.47	14.7
Opuatia Stm @ Ponganui Rd	12	15.3	15.2	7.5	21.8	6.7	-0.16	14.8
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	14.2	14.6	9.7	17.5	5.4	-0.25	13.9
Waerenga Stm @ Taniwha Rd	12	14.7	14.7	6.9	21.5	6.4	-0.16	14.1
Waitawhiriwhiri Stm @ Edgecumbe Street	12	16.4	16.5	11.5	20.3	3.3	-0.30	16.4
Whakapipi Stm @ SH22 Br	12	15.8	16.2	8.0	21.0	5.0	-0.55	15.2
Whakauru Stm @ U/S SH1 Br	12	12.3	13.2	8.1	16.1	4.2	-0.27	12.3
Whangamarino River @ Island Block Rd	12	17.4	17.4	9.6	23.1	8.1	-0.41	17.2
Whangamarino River @ Jefferies Rd Br	12	15.1	14.7	6.0	21.6	6.2	-0.36	14.6
Whangape Stm @ Rangiriri-Glen Murray Rd	12	16.7	16.8	8.9	23.7	6.0	-0.21	16.7

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Waipa River and Tributaries								
Kaniwhaniwha Stm @ Wright Rd	12	14.5	14.6	7.1	19.5	5.5	-0.36	14.1
Mangaohoi Stm @ South Branch Maru Rd	12	14.0	13.5	9.7	18.6	5.3	0.08	13.2
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	13.5	13.5	6.2	18.6	5.0	-0.46	12.6
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	16.7	15.6	10.8	24.3	7.9	0.35	15.7
Mangapu River @ Otorohanga	12	16.1	15.5	8.6	22.2	6.4	-0.13	15.0
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	14.9	13.9	10.6	22.0	6.7	0.53	13.9
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	12.2	12.6	6.6	15.3	3.2	-0.81	11.8
Ohote Stm @ Whatawhata/Horotiu Rd	12	15.7	15.8	10.0	21.4	3.9	0.00	15.7
Puniu River @ Bartons Corner Rd Br	12	15.5	13.9	10.7	22.7	7.2	0.52	14.7
Waipa River @ Mangaokewa Rd	12	13.8	13.8	7.2	18.9	5.4	-0.35	13.4
Waipa River @ Pirongia-Ngutunui Rd Br	12	15.4	14.9	7.2	22.6	5.2	-0.15	14.6
Waipa River @ SH3 Otorohanga	12	15.2	15.0	7.2	20.8	6.7	-0.34	15.0
Waitomo Stm @ SH31 Otorohanga	12	15.3	15.1	8.6	20.7	3.9	-0.28	14.6
Waitomo Stm @ Tumutumu Rd	12	14.4	14.2	10.3	17.8	3.7	0.01	13.7
Tributaries to the upper Waikato River								
Kawaunui Stm @ SH5 Br	12	14.8	15.2	11.2	20.1	5.0	0.18	14.5
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	13.0	13.4	10.2	17.2	4.0	0.15	12.7
Mangakara Stm (Reporoa) @ SH5	12	13.4	13.9	9.9	16.8	4.8	-0.16	13.4
Mangakino Stm (Whakamaru) @ Sandel Rd	12	12.5	12.7	8.4	15.9	4.4	-0.13	12.1
Otamakokore Stm @ Hossack Rd	12	21.2	21.4	17.4	25.4	5.5	-0.16	20.9
Pueto Stm @ Broadlands Rd Br	12	13.8	14.0	11.0	16.5	3.7	-0.11	13.3
Tahunaatara Stm @ Ohakuri Rd	12	13.6	14.3	8.8	18.9	6.6	-0.09	13.7
Torepatutahi Stm @ Vaile Rd Br	12	14.1	14.9	10.4	18.5	4.8	-0.13	14.3
Waiotapu Stm @ Campbell Rd Br	12	28.4	28.3	24.7	32.3	4.9	-0.08	28.4
Waiotapu Stm @ Homestead Rd Br	12	19.3	19.4	15.2	23.6	6.8	-0.14	19.1
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	22.3	22.3	19.5	25.2	4.2	0.01	22.0
Whirinaki Stm @ Corbett Rd	12	12.2	12.3	10.8	14.0	1.5	0.19	12.0
West Coast								
Awakino River @ Gribbon Rd	12	13.4	12.9	6.3	18.8	5.8	-0.22	12.7
Awakino River @ SH3 Awakau Rd Junction	12	14.8	14.5	7.8	21.2	5.5	0.11	14.7
Manganui River @ Off Manganui Rd	12	14.1	13.9	7.4	19.0	4.8	-0.27	13.8
Mangaotaki River @ SH3 Br	12	13.8	13.5	7.3	18.2	4.9	-0.33	13.4
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	14.5	14.4	7.9	18.3	4.1	-0.66	13.9
Mokau River @ Awakau Rd	12	15.7	14.8	7.6	22.2	7.5	-0.07	14.5
Mokau River @ Mangaokewa Rd (Off SH30)	12	12.7	13.1	5.4	17.9	4.3	-0.61	12.4
Mokau River @ Totoro Rd Recorder	12	14.9	14.5	7.4	20.5	6.3	-0.21	13.9
Mokauiti Stm @ Three Way Point - Aria	12	15.3	14.6	6.7	21.6	8.2	-0.21	14.2
Ohautira Stm @ Waingaro Te Uku Rd	12	13.1	13.4	4.9	17.7	5.5	-0.62	12.8
Oparau River @ Langdon Rd (Off Okupata Rd)	12	14.5	14.9	7.1	19.9	3.7	-0.48	14.2
Tawarau River @ Off Speedies Rd	12	14.0	14.2	7.6	18.2	4.7	-0.38	13.6
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	15.3	15.4	6.5	21.3	5.6	-0.36	14.8
Waitetuna River @ Te Uku-Waingaro Rd	12	14.2	14.5	6.0	19.2	5.7	-0.60	14.2
Inflows to Lake Taupo								
Hinemaiaia River @ SH1	12	11.6	11.1	6.5	17.0	7.5	0.06	11.2
Kuratau River @ 43 Te Rae Street	12	9.6	8.9	6.3	12.3	3.5	0.03	8.9
Kuratau River @ SH41 Moerangi	12	13.4	13.4	7.7	19.3	6.4	0.25	13.0
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	10.9	10.3	7.8	13.3	2.6	0.02	10.7
Tauranga-Taupo River @ Te Kono Slackline	12	10.7	10.2	5.6	15.5	5.8	0.00	10.0
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	12	13.1	12.5	7.0	18.9	7.6	-0.11	12.1
Tokaanu Stm @ Off SH41 Turangi	12	12.3	12.3	11.0	13.2	0.7	-0.59	12.0
Waihaha River @ SH32	12	11.7	12.0	7.4	16.9	3.5	0.22	10.7
Waitahanui River @ Blake Rd	12	10.5	10.6	4.2	12.8	1.7	<u>-2.03</u>	10.5
Whanganui Stm @ Lakeside Lake Taupo	12	11.8	11.5	6.9	16.2	4.0	-0.12	10.9
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	12.0	12.5	7.4	15.4	3.7	-0.44	11.5
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	11.7	12.0	7.6	14.2	3.1	-0.57	11.2

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

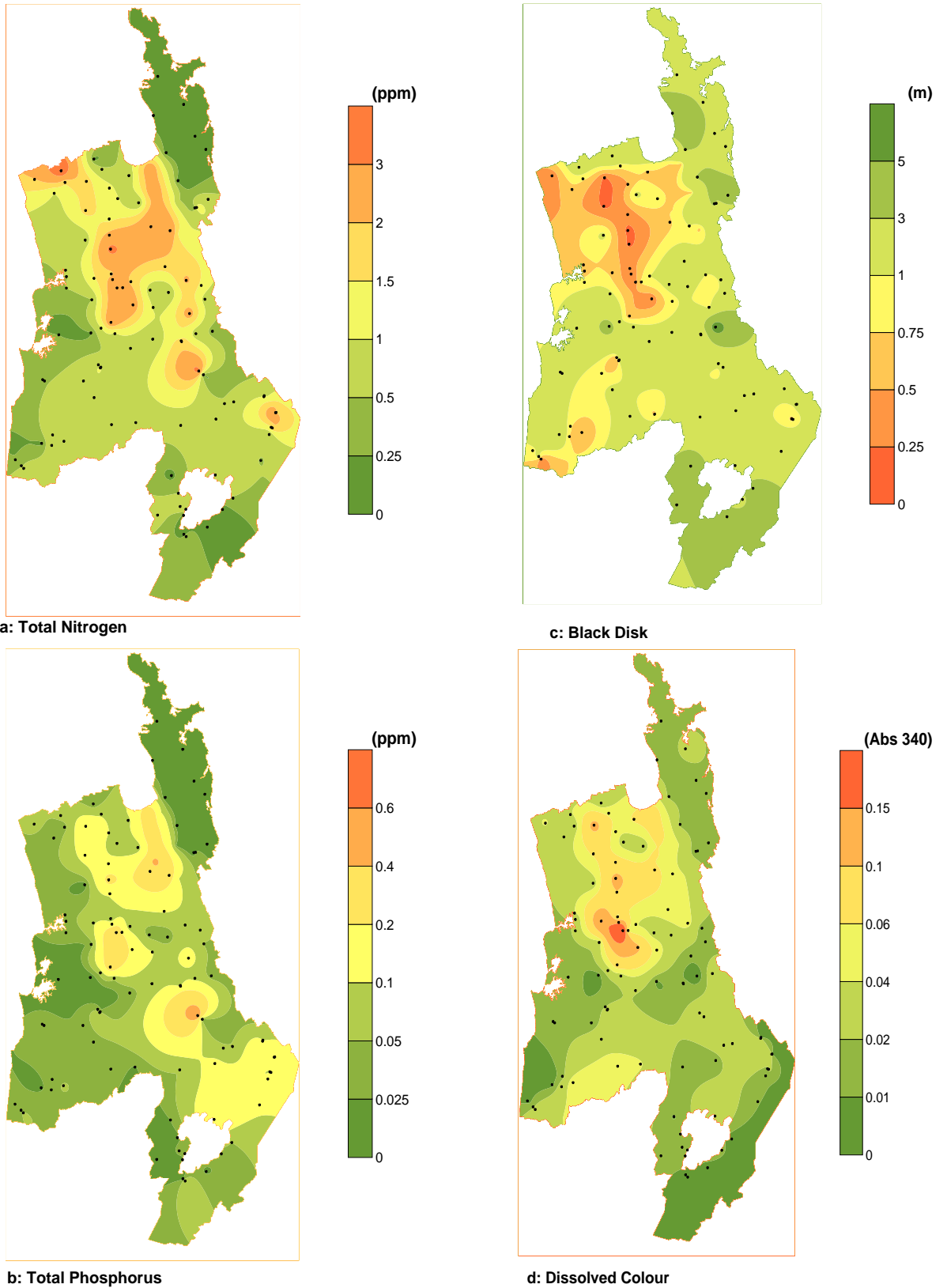


Figure 2: Spatial contour plots of four water quality parameters (based on 5 year median values, 2003-2007); a: Total Nitrogen, b: Total Phosphorus, c: Black disk, d: Dissolved colour (Abs 340)

3.2 Regional Rivers Monitoring Programme Comparison with Water Quality Guidelines and Standards

Number of samples (2007) that comply with Satisfactory Water Quality Standards and with Excellent Water Quality Standards and Guidelines

Location	SATISFACTORY										
	ECOLOGICAL HEALTH							RECREATION			
	DO	pH	Turb	NH4	Temp	TP	TN	Bdisk*	E.coli	E.coli-m	
Coromandel											
Hikutaia River @ Old Maratoto Rd	12	12	12	12	11	12	12	10	2/4	N	
Kauaeranga River @ Smiths Cableway/Recorder	12	12	11	12	10	11	11	9	3/4	Y	
Ohinemuri River @ Queens Head	12	12	12	12	5	11	2	10	4/4	N	
Ohinemuri River @ SH25 Br	12	12	12	12	8	12	3	9	3/4	N	
Tairua River @ Morrisons Br Hikuaia	12	11	11	12	8	12	12	9	3/4	N	
Tapu River @ Tapu-Coroglen Rd	12	12	10	12	11	11	11	10	3/4	N	
Waiau River @ E309 Rd Ford	12	12	7	12	11	11	11	5	2/4	N	
Waitekauri River @ U/S Ohinemuri Conflu	12	12	12	12	8	12	12	10	3/4	N	
Waivawa River @ SH25 Coroglen	12	12	10	12	10	10	10	7	2/4	N	
Wharekawa River @ SH25	11	11	10	12	8	12	12	5	2/4	N	
Hauraki											
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	12	4	12	10	0	7	1	3/4	N	
Oraka Stm @ Lake Rd	12	12	8	12	11	0	0	3	3/4	N	
Piako River @ Kiwitahi	6	12	8	12	7	0	0	5	2/4	N	
Piako River @ Paeroa-Tahunia Rd Br	3	4	1	4	3	0	0	0	1/4	N	
Piakonui Stm @ Piakonui Rd	12	12	10	12	11	10	8	3	3/4	Y	
Waihou River @ Okauia	12	12	7	12	10	0	0	3	4/4	N	
Waihou River @ Whites Rd	12	12	12	12	7	0	0	12	4/4	Y	
Waiohotu Stm @ Waiohotu Rd (Off SH5)	11	12	9	12	11	12	12	0	4/4	Y	
Waiomou Stm @ Matamata-Tauranga Rd	12	12	8	12	11	1	3	2	2/4	N	
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	10	12	3	12	7	0	2	0	2/4	N	
Waitoa River @ Landsdowne Rd Br	11	12	7	12	7	0	0	4	3/4	N	
Waitoa River @ Mellon Rd Recorder	1	12	7	11	7	0	0	6	2/4	N	
Tributaries to the lower Waikato River											
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	9	12	0	11	6	2	0	0	0/4		
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Hunt	11	12	1	12	9	11	3	1	2/4	N	
Karapiro Stm @ Hickey Rd Bridge	12	12	4	12	7	0	1	3	2/4	N	
Kirikiri Stm @ Tauhara Dr	0	12	0	12	9	0	0	0	1/4	N	
Komakorau Stm @ Henry Rd	0	9	0	7	9	0	0	0	0/4	N	
Little Waipa Stm @ Arapuni - Putaruru Rd	11	12	10	12	9	0	0	6	4/4	N	
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	10	12	0	11	9	0	0	0	0/4	N	
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	12	9	12	11	0	0	0	2/4	N	
Mangaone Stm @ Annebrooke Rd Br	4	12	0	12	9	0	0	0	0/4	N	
Mangaonua Stm @ Hoeka Rd	10	12	1	12	9	2	0	0	0/4	N	
Mangaonua Stm @ Te Miro Rd	12	12	10	12	9	6	3	2	3/4	N	
Mangatangi River @ SH2 Maramarua	5	12	3	12	8	0	5	2	0/4	n/a	
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	12	9	12	6	11	10	5	0/4	n/a	
Mangawara Stm @ Rutherford Rd Br	0	10	0	12	8	0	0	0	0/4	n/a	
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	8	12	0	12	9	0	0	0	0/4	N	
Matahuru Stm @ Waiterimu Road Below Confluence	10	12	0	12	8	0	0	0	0/4	n/a	
Ohaeroa Stm @ SH22 Br	12	12	2	12	9	3	0	0	0/4	n/a	
Opuatia Stm @ Ponganui Rd	12	12	1	12	8	7	0	1	1/4	N	
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	12	11	12	11	0	0	5	4/4	N	
Waerenga Stm @ Taniwha Rd	12	12	5	12	8	1	0	2	2/4	N	
Waitawhiriwhiri Stm @ Edgecumbe Street	5	12	0	12	7	0	0	0	0/4	N	
Whakapipi Stm @ SH22 Br	8	12	8	12	8	2	0	4	0/4	n/a	
Whakauru Stm @ U/S SH1 Br	12	12	7	12	11	6	12	1	2/4	N	
Whangamarino River @ Island Block Rd	1	12	0	12	6	0	0	0	0/4	n/a	
Whangamarino River @ Jefferies Rd Br	6	12	0	12	8	0	0	0	0/4	n/a	
Whangape Stm @ Rangiriri-Glen Murray Rd	12	12	0	12	5	0	0	0	0/4	n/a	

Location	EXCELLENT										
	ECOLOGICAL HEALTH							RECREATION			
	DO	pH	Turb	NH4	Temp	TP	TN	Bdisk*	E.coli	E.coli-m	
Coromandel											
Hikutaia River @ Old Maratoto Rd	12	9	9	12	3	4	1	1	0/4	N	
Kauaeranga River @ Smiths Cableway/Recorder	12	9	8	12	2	10	5	2	2/4	N	
Ohinemuri River @ Queens Head	12	11	10	12	0	1	0	0	0/4	N	
Ohinemuri River @ SH25 Br	12	10	11	12	0	3	1	2	0/4	N	
Tairua River @ Morrisons Br Hikuaia	12	10	9	12	0	10	2	1	0/4	N	
Tapu River @ Tapu-Coroglen Rd	12	12	9	12	4	10	7	6	2/4	N	
Waiau River @ E309 Rd Ford	12	12	1	12	4	5	3	0	0/4	N	
Waitekauri River @ U/S Ohinemuri Conflu	12	11	11	12	2	5	2	1	1/4	N	
Waivawa River @ SH25 Coroglen	12	10	8	12	2	8	6	1	0/4	N	
Wharekawa River @ SH25	8	9	0	12	1	8	1	0	0/4	N	
Hauraki											
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	11	0	12	5	0	0	0	1/4	N	
Oraka Stm @ Lake Rd	7	11	1	10	3	0	0	0	0/4	N	
Piako River @ Kiwitahi	1	10	3	11	1	0	0	0	0/4	N	
Piako River @ Paeroa-Tahunia Rd Br	1	3	0	3	1	0	0	0	0/4	N	
Piakonui Stm @ Piakonui Rd	12	10	1	12	6	0	0	0	1/4	N	
Waihou River @ Okauia	10	12	1	12	3	0	0	0	0/4	N	
Waihou River @ Whites Rd	12	7	12	12	7	0	0	12	4/4	N	
Waiohotu Stm @ Waiohotu Rd (Off SH5)	9	11	0	12	10	0	0	0	4/4	N	
Waiomou Stm @ Matamata-Tauranga Rd	12	11	2	12	4	0	0	0	0/4	N	
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	4	11	0	11	2	0	0	0	0/4	N	
Waitoa River @ Landsdowne Rd Br	5	11	3	11	1	0	0	1	0/4	N	
Waitoa River @ Mellon Rd Recorder	0	10	2	8	1	0	0	0	0/4	N	
Tributaries to the lower Waikato River											
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	4	11	0	8	1	0	0	0	n/a	n/a	
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Hunt	0	10	0	12	4	1	0	0	0/4	N	
Karapiro Stm @ Hickey Rd Bridge	2	10	0	12	3	0	0	0	0/4	N	
Kirikiri Stm @ Tauhara Dr	0	2	0	0	3	0	0	0	0/4	N	
Komakorau Stm @ Henry Rd	0	1	0	0	4	0	0	0	0/4	N	
Little Waipa Stm @ Arapuni - Putaruru Rd	11	9	6	12	4	0	0	1	0/4	N	
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	0	8	0	1	2	0	0	0	0/4	N	
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	12	0	9	4	0	0	0	0/4	N	
Mangaone Stm @ Annebrooke Rd Br	0	12	0	12	5	0	0	0	0/4	N	
Mangaonua Stm @ Hoeka Rd	0	10	0	8	4	0	0	0	0/4	N	
Mangaonua Stm @ Te Miro Rd	12	11	0	12	4	0	0	0	0/4	N	
Mangatangi River @ SH2 Maramarua	1	10	0	11	1	0	0	0	n/a	n/a	
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	11	3	12	1	0	1	0	n/a	n/a	
Mangawara Stm @ Rutherford Rd Br	0	2	0	0	4	0	0	0	n/a	n/a	
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	0	10	0	5	5	0	0	0	0/4	N	
Matahuru Stm @ Waiterimu Road Below Confluence	0	9	0	8	5	0	0	0	n/a	n/a	
Ohaeroa Stm @ SH22 Br	11	11	0	12	5	0	0	0	n/a	n/a	
Opuatia Stm @ Ponganui Rd	12	12	0	12	3	0	0	0	0/4	N	
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	12	6	12	4	0	0	0	0/4	N	
Waerenga Stm @ Taniwha Rd	10	10	0	12	5	0	0	0	0/4	N	
Waitawhiriwhiri Stm @ Edgecumbe Street	0	6	0	0	0	0	0	0	0/4	N	
Whakapipi Stm @ SH22 Br	2	11	0	11	3	0	0	0	n/a	n/a	
Whakauru Stm @ U/S SH1 Br	12	12	1	12	9	0	0	0	0/4	N	
Whangamarino River @ Island Block Rd	1	5	0	8	2	0	0	0	n/a	n/a	
Whangamarino River @ Jefferies Rd Br	0	10	0	8	3	0	0	0	n/a	n/a	
Whangape Stm @ Rangiriri-Glen Murray Rd	8	6	0	12	3	0	0	0	n/a	n/a	

Waipa River and Tributaries										
Kaniwhaniwha Strm @ Wright Rd	12	12	5	12	9	11	7	1	0/4	n/a
Mangaohoi Strm @ South Branch Maru Rd	12	12	12	12	10	2	9	2	4/4	Y
Mangaokewa Strm @ Te Kuiti Borough W/S Intake	12	12	8	12	10	5	2	1	0/4	n/a
Mangapiko Strm (Pirongia/Te Awamutu) @ Bowman Rd	10	12	2	12	5	0	0	1	0/4	n/a
Mangapu River @ Otorohanga	12	12	4	12	6	0	1	1	1/4	N
Mangatutu Strm (Waikeria) @ Walker Rd Br	12	12	8	12	9	10	7	6	2/4	N
Mangauika Strm @ Te Awamutu Borough W/S Intake	12	12	12	12	10	12	12	11	4/4	Y
Ohote Strm @ Whatawhata/Horotiu Rd	0	11	0	12	8	0	0	0	2/4	N
Puniu River @ Bartons Corner Rd Br	12	12	7	12	8	0	2	4	0/4	n/a
Waipa River @ Mangaokewa Rd	12	12	12	12	10	11	4	8	0/4	n/a
Waipa River @ Pirongia-Ngutu Rd Br	12	12	2	12	7	0	1	0	2/4	N
Waipa River @ SH3 Otorohanga	12	12	9	12	8	10	7	5	3/4	N
Waitomo Strm @ SH31 Otorohanga	12	12	4	12	7	8	2	2	2/4	N
Waitomo Strm @ Tumutumu Rd	12	12	7	12	9	10	0	4	2/4	N

1	10	0	12	4	0	0	0	0	n/a	n/a
11	9	4	12	4	0	0	0	0	2/4	N
10	11	0	12	6	0	0	0	0	n/a	n/a
6	8	0	8	2	0	0	0	0	n/a	n/a
8	11	0	12	3	0	0	0	0	0/4	N
12	8	2	12	2	0	0	0	0	0/4	N
12	11	11	12	8	9	1	9	4/4	Y	Y
0	1	0	9	2	0	0	0	0	0/4	N
8	8	1	12	2	0	0	0	0	n/a	n/a
12	12	5	12	6	0	0	0	0	n/a	n/a
5	11	0	12	3	0	0	0	0	0/4	N
12	12	3	12	3	0	0	0	0	0/4	N
11	9	0	12	3	0	0	0	0	0/4	N
12	9	0	12	4	0	0	0	0	0/4	N

Tributaries to the Upper Waikato River										
Kawaunui Strm @ SH5 Br	5	12	5	11	10	0	0	2	1/4	N
Mangaharakeke Strm (Atiamuri) @ SH30 (Off Jct SH1)	12	12	9	12	11	0	7	0	3/4	N
Mangakara Strm (Reporoa) @ SH5	12	12	6	12	11	0	0	1	2/4	N
Mangakino Strm (Whakamaru) @ Sandel Rd	12	12	12	12	11	0	0	10	0/4	n/a
Otamakokore Strm @ Hossack Rd	12	12	9	12	0	0	0	1	3/4	N
Pueto Strm @ Broadlands Rd Br	12	12	12	12	11	0	4	8	3/4	Y
Tahunaaatara Strm @ Ohakuri Rd	12	12	12	12	11	0	0	3	3/4	N
Torepatutahi Strm @ Vaile Rd Br	12	12	11	12	11	0	8	0	0/4	n/a
Waiotapu Strm @ Campbell Rd Br	12	0	3	10	0	0	0	2	4/4	Y
Waiotapu Strm @ Homestead Rd Br	9	12	2	12	2	0	0	0	0/4	n/a
Waipapa Strm (Mokai) @ Tirohanga Rd Br	12	12	11	12	0	0	0	4	3/4	N
Whirinaki Strm @ Corbett Rd	12	12	12	12	12	0	0	0	0/4	n/a

0	8	2	4	1	0	0	0	0	0/4	N
9	11	0	12	6	0	0	0	0	1/4	N
5	10	0	11	7	0	0	0	0	0/4	N
12	12	11	12	10	0	0	0	0	n/a	n/a
10	3	3	12	0	0	0	0	0	0/4	N
9	12	4	12	5	0	0	0	0	2/4	N
12	12	4	12	6	0	0	0	0	1/4	N
12	12	11	11	3	0	0	0	0	n/a	n/a
1	0	0	0	0	0	0	0	0	4/4	Y
2	7	1	3	0	0	0	0	0	n/a	n/a
12	12	1	12	0	0	0	0	0	2/4	N
12	12	12	12	7	0	0	0	0	n/a	n/a

West Coast										
Awakino River @ Gribbon Rd	12	12	11	12	10	11	12	7	4/4	N
Awakino River @ SH3 Awakau Rd Junction	12	12	7	12	8	10	10	3	4/4	N
Manganui River @ Off Manganui Rd	12	12	6	12	10	8	11	2	1/4	N
Mangaotaki River @ SH3 Br	12	12	5	12	10	8	0	2	0/4	n/a
Marokopa River @ Speedies Rd (Off Te Angra Rd)	12	12	7	12	9	7	7	4	1/4	N
Mokau River @ Awakau Rd	12	12	1	12	7	5	2	0	2/4	N
Mokau River @ Mangaokewa Rd (Off SH30)	12	12	12	12	10	8	6	3	3/4	N
Mokau River @ Totoro Rd Recorder	12	12	4	12	8	6	2	2	2/4	N
Mokauti Strm @ Three Way Point - Aria	11	12	1	12	7	1	4	0	2/4	N
Ohautira Strm @ Waingarua Te Uku Rd	12	12	2	12	10	3	9	0	2/4	N
Oparau River @ Langdon Rd (Off Okupata Rd)	12	12	9	12	9	12	11	5	0/4	n/a
Tawarau River @ Off Speedies Rd	12	12	7	12	10	7	5	3	0/4	n/a
Waingarua River (Pukemiro) @ Ruakiwi Rd Off SH22	12	12	1	12	7	6	4	0	0/4	n/a
Waitetuna River @ Te Uku-Waingarua Rd	12	12	1	12	10	7	8	0	2/4	N

12	11	6	12	5	0	1	2	1/4	N	N
12	9	4	12	5	0	2	0	0/4	N	N
12	12	0	12	4	0	4	0	1/4	N	N
12	12	2	12	5	0	0	0	n/a	n/a	n/a
12	9	2	12	4	0	0	0	0/4	N	N
8	12	0	12	3	0	0	0	0/4	N	N
12	12	1	12	8	0	0	0	1/4	N	N
12	12	1	12	3	0	0	0	0/4	N	N
7	11	0	11	3	0	0	0	0/4	N	N
12	11	0	12	5	0	0	0	0/4	N	N
12	12	3	12	5	2	0	0	n/a	n/a	n/a
12	9	2	12	4	0	0	0	n/a	n/a	n/a
8	11	0	12	4	0	0	0	n/a	n/a	n/a
12	11	0	12	4	0	0	0	0/4	N	N

Inflows to Lake Taupo										
Hinemaiaia River @ SH1	12	12	12	12	12	7	12	12	4/4	Y
Kuratau River @ SH41 Moerangi	12	12	12	12	12	12	11	0/4	n/a	n/a
Kuratau River @ Te Rae Street	12	12	12	12	11	12	0	0	4/4	Y
Mapara Strm @ Off Mapara Rd (Whakaipo Res)	12	12	12	12	12	0	0	2	4/4	Y
Tauranga-Taupo River @ Te Kono Slackline	12	12	12	12	12	12	12	0/4	n/a	n/a
Tokaanu Power Station Tailrace Canal @ SH41 Bridge O.	12	12	12	12	12	12	0	0/4	n/a	n/a
Tokaanu Strm @ Off SH41 Turangi	4	12	12	12	9	0	12	0	0/4	n/a
Waihaha River @ SH32	12	12	12	12	12	12	12	4/4	Y	Y
Waitahanui River @ Blake Rd	12	12	12	12	12	0	4	12	4/4	Y
Whanganui Strm @ Lakeside Lake Taupo	12	12	12	12	12	9	0	4/4	Y	Y
Whareroa Strm @ Lakeside Lake Taupo	12	12	9	12	11	8	0	0	4/4	Y
Whareroa Strm @ Whareroa Station Bridge	12	12	10	12	12	10	0	0	3/4	Y

12	12	12	12	9	0	4	0	4/4	Y	Y
8	9	8	12	12	11	0	2	n/a	n/a	n/a
11	12	12	12	6	0	0	0	2/4	N	N
1	11	1	12	11	0	0	0	1/4	N	N
12	12	12	12	11	0	4	5	n/a	n/a	n/a
12	12	12	12	6	1	4	0	n/a	n/a	n/a
0	10	12	12	7	0	0	0	n/a	n/a	n/a
12	12	12	12	9	0	0	4	4/4	Y	Y
12	12	12	12	9	0	0	5	4/4	Y	Y
11	12	9	12	9	0	0	0	1/4	N	N
12	12	4	12	9	0	0	0	0/4	N	N
12	12	3	12	9	0	0	0	1/4	N	N

E.coli-m refers to whether the 2007 sample median meets the satisfactory median *E.coli* guideline of <126/100 ml or the Excellent guideline value of <23/100 ml for recreational use of water

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Appendix I: Water Quality Guidelines and Standards

Details of Water Quality Guidelines and Standards for “Satisfactory” Water Quality

Parameter	Critical Value(s)	Source
Dissolved oxygen	>80% of saturation concentration	RMA Third Schedule, Classes AE, F, and FS.
pH	6.5–9	ANZECC (1992) and Canadian guidelines for freshwater aquatic life (1987).
Turbidity	<5 NTU	Studies of adverse effects on underwater light—and thus on plant and invertebrate production—in certain South Island streams (Davies-Colley 1991).
Ammoniacal-nitrogen	<0.88 g N/m ³	USEPA (1998) value for 1-hour exposure at pH 9.
Temperature	<12°C (May – Sep) <20°C (Oct – Apr)	Environment Waikato Draft Regional Plan standards for trout fisheries and trout spawning (1997).
Total phosphorus	<0.04 g/m ³	From upper quartile values for 77 New Zealand rivers in NIWA’s National Water Quality Network (after Smith & Maasdam 1994)—note that the guidelines for “excellent” conditions are the lower quartile concentrations for these rivers.
Total nitrogen	<0.5 g/m ³	From upper quartile values for 77 New Zealand rivers in NIWA’s National Water Quality Network (after Smith & Maasdam 1994)—note that the guidelines for “excellent” conditions are the lower quartile concentrations for these rivers.
Water clarity at baseflow	>1.6 m	“Baseflow” defined as flows less than the upper decile flow. Guideline from Ministry for the Environment (1994).
<i>Escherichia coli</i>	<550/100 mL	Ministry of the Environment (2003) guidelines for the management of recreational and marine shellfish-gathering waters.
Median <i>Escherichia coli</i>	<126/100 mL	Ministry of the Environment (1999) guidelines for the management of recreational and marine shellfish-gathering waters.

Appendix II: Water Quality Monitoring Parameters

Field Instruments and Analytical Methods

Regional Rivers Water Quality Monitoring Parameters

Water Quality Parameter	Reason For Monitoring	Parameter Monitored ¹	Comments ²
Dissolved Oxygen	- requirement for aquatic life	DO (conc.)	routine (field)
	- indicator of organic pollution	DO (%sat.)	routine (field)
	- indicator of photosynthesis (plant growth)		
Temperature	- indicator of biological activity	Temperature	routine (field)
	- requirement for aquatic life		
	- mixing processes		
	- modelling studies (e.g. nutrient uptake)		
Conductivity	- indicator of total salts dissolved in water	Conductivity	routine
pH	- aquatic life protection	pH	routine
	- indicator of industrial discharges, mining		
Clarity turbidity black disk (visual clarity)	- aesthetic appearance	Turbidity	routine
	- light availability for excessive plant growth	Black disk	routine (field)
	- aquatic life protection		
Colour light absorption	- indicator of catchment condition, land use		
	- light availability for excessive plant growth	Filtered Absorbance at: 340,440,780nm	routine
Nutrients (N and P)	- indicator of presence of organic matter		
	- enrichment, excessive plant growth	NO ₃ -N+NO ₂ -N NH ₄ -N,TKN	routine
Faecal Indicators <i>E. coli</i> enterococci faecal coliforms	- nutrient limitation for plant/algal growth	DRP, TP	
	- indicator of pollution with faecal matter	E.coli ENT	quarterly
	- disease risk for swimming etc.	FC	

¹ see the next table for the meaning of the abbreviations.

² routine means sampled monthly.

Regional Rivers Monitoring - Water Quality Parameters & Analytical Methods of Analysis

Id¹	Parameter	Method
A340F	Absorbance @ 340 nm Filtered	Spectrophotometer, 1 cm path length, APHA method 5910B
A440F	Absorbance @ 440 nm Filtered	Spectrophotometer, 1 cm path length, APHA method 5910B
A780F	Absorbance @ 780 nm Filtered	Spectrophotometer, 1 cm path length, APHA method 5910B
BDISK	Black Disk	Field measurement, horizontal water transparency (20mm, 60mm, 100mm, 200mm disk) in river or trough (20mm only)
COND	Conductivity	Lab Meter @ 25°C. APHA method 2510B
DO	Dissolved Oxygen	Field measurement (WTW DO meter, model 340A)
DO (% Sat)	Dissolved Oxygen (percent saturation)	Field measurement (WTW DO meter, model 340A)
pH	pH	Lab Meter @ 25°C. APHA method 4500-H+B
TEMP	Temperature	Field measurement (WTW DO Meter, model 340A)
E. coli	Escherichia coli	Membrane Filtration (mFC Agar) confirmation by NA-MUG Agar. APHA method 9222G
ENT	Enterococci bacteria	Membrane Filtration (mE Agar) confirmation by EIA Agar. APHA method 9230
FC	Faecal Coliforms	Membrane Filtration (mFC Agar). APHA method 9222
NH ₄ -N	Ammoniacal Nitrogen	Phenol/Hypochlorite Colorimetry. Flow injection analyser. APHA method 4500-NC (modified)
NNN	Nitrite/Nitrate Nitrogen	Automated Cadmium reduction. Flow injection analyser. APHA method 4500 – NO ₃ (proposed).
TKN	Total Kjeldahl-Nitrogen	Acid digestion. Phenol/Hypochlorite Colorimetry. APHA method 4500-N _{org} C (modified)
TN	Total Nitrogen	Calculated from NNN + TKN (Nitrite/Nitrate Nitrogen + Total Kjeldahl-Nitrogen)
DRP	Dissolved Reactive Phosphorus	Molybdenum Blue Colorimetry. Flow injection analyser. APHA 4500 PG (proposed)
TP	Total Phosphorus	Persulphate digestion, Colorimetry. NAWASCO method 8.
TURB	Turbidity	Turbidity Meter. APHA method 2130B

Major Ions, analysed during 2005

Id¹	Parameter	Method
ALKT	Alkalinity Total	Potentiometric autotitration to pH 4.5
HCO ₃	Bicarbonate	Bicarbonate Calculation from alkalinity & pH (APHA 1989.Method 4500-CO ₂ D)
Ca Diss	Calcium Dissolved	Filtered, ICP-MS. APHA Method 3125B.
Cl	Chloride	Filtered Sample.Ferric thiocyanide colorimetry. Discrete Analyser. APHA 4110 - CL E (modified from continuous flow analysis).
K Diss	Potassium Dissolved	Filtered, Atomic Emission Spectroscopy. APHA 3500-K B.
Mg Diss	Magnesium Dissolved	Filtered, ICP-MS.APHA Method 3125B.
Na Diss	Sodium Dissolved	Filtered, ICP-MS. APHA Method 3125B.
SO ₄ Chro	Sulphate Dissolved	Ion chromatography APHA 4110B

¹ Parameter Id ref