

Regional rivers water quality monitoring programme: Data report 2011

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1 Introduction

1.1 Background

To effectively manage water quality, the regional rivers 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 Waikato Regional Council 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 16th since the implementation of the regional rivers monitoring programme (RERIMP) in 1993¹ and follows the format of the previous data report (Tulagi, 2011). Copies of reports as described in the list of references (page 30) can be obtained by contacting Waikato Regional Council (the Library) on 0800 800 401, or in electronic format from the publications page of the Waikato Regional Council website: www.waikatoregion.govt.nz/publications or email: inforeq@waikatoregion.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 2011 summary statistics tabulated by parameter and reported together
- 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 2011. 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 (for example swimming).

¹ Waikato River reported separately — see Tulagi, 2012.

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)	fish (spawning)	<12	<10
	(May-Sep)	<20	<16
	(Oct-Apr)		
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 Waikato Regional Council Internet site - www.waikatoregion.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 sites were sampled monthly by Waikato Regional Council. A further five locations form part of NIWA’s National Rivers Water Quality Network, whose data can be found on the NIWA website (www.niwa.co.nz).

Table 2: Waikato Regional Council's sampling locations

Map No.	Location	Location Id	Map Ref.
Coromandel			
1	Hikutaia River at Old Maratoto Rd	169.2	T12:471-312
2	Kauaeranga River at Smiths Cableway/Recorder	234.11	T12:404-461
9	Ohinemuri River at Queens Head	619.19	T13:576-170
8	Ohinemuri River at SH25 Bridge	619.20	T13:641-213
6	Tairua River at Morrisons Bridge Hikuia	940.10	T12:567-548
3	Tapu River at Tapu-Coroglen Rd	954.5	T11:332-658
4	Waiau River at E309 Rd Ford	1105.3	T11:357-866
10	Waitekauri River at U/S Ohinemuri Confluence	1239.32	T13:566-168
5	Waiwawa River at SH25 Coroglen	1257.3	T11:503-717
7	Wharekawa River at SH25	1312.3	T12:628-478
Hauraki			
12	Mangawhero Stm (Kaihere) at Mangawara Rd	489.2	S13:249-195
20	Oraka Stm at Lake Rd	669.6	T15:536-607
15	Piako River at Kiwitahi	749.10	T14:398-856
13	Piako River at Paeroa-Tahuna Rd Bridge	749.15	T13:318-068
17	Piakonui Stm at Piakonui Rd	753.4	T14:417-719
18	Waihou River at Okauia	1122.18	T14:602-756
21	Waihou River at Whites Rd	1122.41	T15:572-500
22	Waiohotu Stm at Waiohotu Rd (Off SH5)	1173.2	T15:665-513
19	Waiomou Stm at Matamata-Tauranga Rd	1174.4	T15:623-683
11	Waitakaruru River (Hauraki Plains) at Coxhead Rd Bridge	1230.1	S12:194-339
16	Waitoa River at Landsdowne Rd Bridge	1249.15	T14:517-783
14	Waitoa River at Mellon Rd Recorder	1249.18	T13:426-047
Tributaries to the lower Waikato River			
23	Awaroa River (Waiuku) at Otaua Rd Bridge opp Moseley Rd	41.9	R12:662-319
34	Awaroa Stm (Rotowaro) at Sansons Bridge–Rotowaro-Huntly	39.11	S14:948-997
44	Karapiro Stm at Hickey Rd Bridge	230.5	T15:331-639
37	Kirikiroa Stm at Tauhara Drive	253.4	S14:095-817
36	Komakorau Stm at Henry Rd	258.4	S14:091-949
45	Little Waipa Stm at Arapuni – Putaruru Rd	335.1	T15:489-462
39	Mangakotukutuku Stm (Rukuhia) at Peacock Rd	398.1	S14:127-743
47	Mangamingi Stm (Tokoroa) at Paraonui Rd Bridge	407.1	T16:588-302
40	Mangaone Stm at Annebrooke Rd Bridge	417.7	S14:159-744
41	Mangaonua Stm at Hoeka Rd	421.10	S14:205-776
42	Mangaonua Stm at Harbutt Rd	421.50	T14:315-732
28	Mangatangi River at SH2 Maramarua	453.6	S12:042-372
27	Mangatawhiri River at Lyons Rd at Buckingsham Bridge	459.6	S12:997-427
35	Mangawara Stm at Rutherford Rd Bridge	481.7	S13:084-023
43	Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	488.1	S15:217-653
33	Matahuru Stm at Waiterimu Rd Br	516.5	S13:083-109
25	Ohaeroa Stm at SH22 Bridge	612.9	R12:834-303
24	Opuatia Stm at Ponganui Rd	665.5	R13:773-245
46	Pokaiwhenua Stm at Arapuni-Putaruru Rd	786.2	T15:491-458
31	Waerenga Stm at Taniwha Rd	1098.1	S13:131-217
38	Waitawhiriwhiri Stm at Edgecumbe Street	1236.2	S14:102-787
26	Whakapipi Stm at SH22 Bridge	1282.8	R12:812-365
48	Whakauru Stm at U/S SH1 Bridge	1287.7	T16:614-282
29	Whangamarino River at Island Block Rd	1293.7	S12:954-308
30	Whangamarino River at Jefferies Rd Bridge	1293.9	S13:084-273
32	Whangape Stm at Rangiriri-Glen Murray Rd	1302.1	S13:950-154

Map No.	Location	Location Id	Map Ref.
Waipa River and tributaries			
50	Kaniwhaniwha Stm at Wright Rd	222.16	S15:985-680
56	Mangaohoi Stm at South Branch Maru Rd	411.9	T15:329-471
61	Mangaokewa Stm at Lawrence St Bridge	414.6	S16:998-162
51	Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	438.3	S15:093-560
58	Mangapu River at Otorohanga	443.3	S16:033-318
55	Mangatutu Stm (Waikeria) at Walker Rd Bridge	476.7	S15:203-422
52	Mangauika Stm at Te Awamutu Borough Water Supply Intake	477.10	S15:980-504
49	Ohote Stm at Whatawhata/Horotiu Rd	624.5	S14:997-794
54	Puniu River at Bartons Corner Rd Bridge	818.2	S15:115-500
62	Waipa River at Mangaokewa Rd	1191.5	S17:233-028
53	Waipa River at Pirongia-Ngutunui Rd Bridge	1191.10	S15:037-529
59	Waipa River at SH3 Otorohanga	1191.12	S16:036-322
57	Waitomo Stm at SH31 Otorohanga	1253.5	S16:022-335
60	Waitomo Stm at Tumutumu Rd	1253.7	S16:938-249
Tributaries to the upper Waikato River			
69	Kawaunui Stm at SH5 Bridge	240.5	U17:021-081
65	Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	359.1	U16:733-129
71	Mangakara Stm (Reporoa) at SH5	380.2	U17:996-003
63	Mangakino River (Whakamaru) at Sandel Rd	388.1	T17:486-013
67	Otamakokore Stm at Hossack Rd	683.4	U16:955-166
74	Pueto Stm at Broadlands Rd Bridge	802.1	U17:938-827
66	Tahunaatara Stm at Ohakuri Rd	934.1	U16:785-138
73	Torepatutahi Stm at Vaile Rd Bridge	1057.6	U17:985-965
70	Waiotapu Stm at Campbell Rd Bridge	1186.2	U17:024-082
72	Waiotapu Stm at Homestead Rd Bridge	1186.4	U17:003-000
64	Waipapa Stm (Mokai) at Tirohanga Rd Bridge	1202.7	T17:685-047
68	Whirinaki Stm at Corbett Rd	1323.1	U16:957-171
West coast			
84	Awakino River at Gribbon Rd	33.6	R17:702-918
82	Awakino River at SH3 Awakau Rd Junction	33.9	R18:588-799
81	Manganui River at Off Manganui Rd	410.4	R17:554-831
85	Mangaotaki River at SH3 Bridge	428.3	R17:764-963
79	Marokopa River at Speedies Rd (Off Te Anga Rd)	513.3	R16:708-256
83	Mokau River at Awakau Rd	556.2	R18:601-785
88	Mokau River at Mangaokewa Rd (Off SH30)	556.5	S17:096-017
86	Mokau River at Totoro Rd Recorder	556.9	R17:759-907
87	Mokauiti Stm at Three Way Point – Aria	557.5	R17:828-929
77	Ohautira River at Waingaro - Te Uku Rd	616.1	R14:842-803
78	Oparau River at Langdon Rd (Off Okupata Rd)	658.1	R15:799-494
80	Tawarau River at Off Speedies Rd	976.1	R16:718-249
75	Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	1167.4	R14:837-837
76	Waitetuna River at Te Uku-Waingaro Rd	1247.2	R14:842-742
Inflows to Lake Taupo			
91	Hinemaiaia River at SH1	171.5	U18:722-567
96	Kuratau River at Te Rae Street	282.5	T18:502-536
95	Kuratau River at SH41 Moerangi	282.4	T18:356-537
89	Mapara Stm at Off Mapara Rd (Whakaipo Reserve)	504.2	T18:681-750
92	Tauranga-Taupo River at Te Kono Slackline	971.4	T19:636-473
94	Tokaanu Power Station Tailrace Canal at SH41 Bridge	1491.1	T19:504-435
93	Tokaanu Stm at Off SH41 Turangi	1045.3	T19:517-423
99	Waihaha River at SH32	1106.4	T18:434-747
90	Waitahanui River at Blake Rd	1226.1	U18:781-627
100	Whangamata Stm (Kinloch) at Whangamata Rd	1300.1	T17:649-804
98	Whanganui Stream at Lakeside Lake Taupo	1301.1	T18:473-653
97	Whareroa Stream at Lakeside Lake Taupo	1318.4	T18:515-568

2.2 Sample collection

Sample collection occurs monthly. The 100 locations sampled by Waikato Regional Council 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, *E. coli* and faecal coliform 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 Waikato Regional Council's ISO 9001:2008 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 Waikato Regional Council'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 2008) summarises the trends and patterns in regional water quality during 1990 to 2007. Waikato Regional Council's State of the Environment Report briefly summarises the state of the rivers in the region, and common pressures (Waikato Regional Council, 1999).

The data contained in these regional rivers reports is updated to the Waikato Regional Council "Healthy Rivers" internet page:

<http://www.waikatoregion.govt.nz/Environmental-information/Rivers-lakes-and-wetlands/>

This page also provides a link to details of the water quality guidelines and standards used to assess the condition of the region's rivers, as well as other information relating to lakes, rivers and wetlands.

3 Results

The results are divided into two sections. Section 3.1 has a statistical summary of routine monitoring of the region's rivers in 2011 and provides the spatial contour plots using water quality data from four parameters, based on median values for the last five 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	07-11							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River at Old Maratoto Rd	12	0.020	0.018	0.011	0.054	0.008	2.32	0.016
Kauaeranga River at Smiths Cableway/Recorder	12	0.027	0.017	0.010	0.091	0.018	1.68	0.014
Ohinemuri River at Queens Head	12	0.018	0.015	0.007	0.039	0.011	0.97	0.015
Ohinemuri River at SH25 Br	12	0.014	0.014	0.004	0.034	0.006	1.52	0.013
Tairua River at Morrisons Br Hikuai	12	0.022	0.018	0.010	0.050	0.012	1.28	0.016
Tapu River at Tapu-Coroglen Rd	12	0.016	0.010	0.006	0.049	0.013	1.60	0.010
Waiau River at E309 Rd Ford	12	0.020	0.014	0.009	0.063	0.005	1.86	0.014
Waitekauri River at U/S Ohinemuri Conflu	12	0.014	0.013	0.007	0.028	0.008	0.90	0.012
Waiwawa River at SH25 Coroglen	12	0.033	0.025	0.013	0.084	0.022	1.39	0.023
Wharekawa River at SH25	12	0.018	0.017	0.009	0.030	0.012	0.35	0.017
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	0.022	0.018	0.009	0.039	0.019	0.66	0.020
Oraka Stm at Lake Rd	12	0.021	0.012	0.006	0.066	0.016	1.45	0.013
Piako River at Kiwitahi	12	0.054	0.049	0.038	0.081	0.022	0.62	0.049
Piako River at Paeroa-Tahuna Rd Br	12	0.085	0.084	0.055	0.108	0.013	-0.53	0.075
Piakonui Stm at Piakonui Rd	12	0.035	0.029	0.017	0.081	0.013	<u>1.76</u>	0.029
Waihou River at Okauia	12	0.019	0.012	0.007	0.059	0.013	<u>1.81</u>	0.013
Waihou River at Whites Rd	12	0.002	0.001	0.001	0.007	0.001	1.60	0.001
Waiohotu Stm at Waiohotu Rd (Off SH5)	12	0.045	0.033	0.021	0.158	0.016	<u>2.74</u>	0.034
Waiomou Stm at Matamata-Tauranga Rd	12	0.023	0.017	0.011	0.070	0.007	<u>1.82</u>	0.017
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	0.073	0.068	0.045	0.133	0.023	1.19	0.063
Waitoa River at Landsdowne Rd Br	12	0.051	0.050	0.034	0.077	0.016	0.58	0.047
Waitoa River at Mellon Rd Recorder	12	0.052	0.048	0.030	0.084	0.029	0.43	0.042
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	0.046	0.045	0.020	0.082	0.024	0.57	0.040
Awaroa Stm (Rotowaro) at Sansons Br, Rotowaro-Huntly Rd	12	0.024	0.022	0.014	0.040	0.007	0.89	0.023
Karapiro Stm at Hickey Rd Bridge	12	0.053	0.051	0.035	0.078	0.026	0.43	0.047
Kirikiriua Stm at Tauhara Dr	12	0.057	0.055	0.048	0.077	0.006	1.67	0.056
Komakorau Stm at Henry Rd	12	0.140	0.111	0.088	0.280	0.085	1.19	0.110
Little Waipa Stm at Arapuni - Putaruru Rd	12	0.021	0.011	0.003	0.083	0.022	<u>1.71</u>	0.011
Mangakotukutuku Stm (Rukuhia) at Peacocks Rd	12	0.351	0.360	0.120	0.620	0.259	0.18	0.260
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	0.031	0.023	0.015	0.092	0.011	<u>2.04</u>	0.027
Mangaone Stm at Annebrooke Rd Br	12	0.054	0.053	0.041	0.076	0.015	0.75	0.051
Mangaonua Stm at Harbutt Rd Br	12	0.029	0.029	0.010	0.054	0.011	0.66	0.027
Mangaonua Stm at Hoeka Rd	12	0.040	0.038	0.029	0.067	0.010	1.45	0.034
Mangatangi River at SH2 Maramarua	12	0.055	0.052	0.038	0.084	0.022	0.77	0.051
Mangatawhiri River at Lyons Rd At Buckingham Br	12	0.025	0.023	0.015	0.040	0.016	0.63	0.024
Mangawara Stm at Rutherford Rd Br	12	0.149	0.147	0.096	0.200	0.047	0.11	0.124
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	0.154	0.128	0.055	0.350	0.080	1.22	0.095
Matahuru Stm at Waiterimu Road Below Confluence	12	0.095	0.096	0.057	0.142	0.033	0.23	0.081
Ohaeroa Stm at SH22 Br	12	0.027	0.026	0.014	0.053	0.011	1.06	0.025
Opuatia Stm at Ponganui Rd	12	0.029	0.027	0.015	0.053	0.012	0.98	0.028
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	0.024	0.013	0.008	0.095	0.019	<u>2.04</u>	0.014
Waerenga Stm at Taniwha Rd	12	0.029	0.027	0.015	0.062	0.011	1.41	0.028
Waitawhirihiri Stm at Edgecumbe Street	12	0.180	0.182	0.064	0.350	0.109	0.60	0.140
Whakapipi Stm at SH22 Br	12	0.042	0.042	0.022	0.072	0.019	0.50	0.038
Whakauru Stm at U/S SH1 Br	12	0.027	0.021	0.016	0.062	0.012	1.51	0.025
Whangamarino River at Island Block Rd	12	0.170	0.148	0.087	0.410	0.112	1.35	0.110
Whangamarino River at Jefferies Rd Br	12	0.049	0.049	0.028	0.082	0.018	0.77	0.045
Whangape Stm at Rangiriri-Glen Murray Rd	12	0.080	0.084	0.048	0.112	0.036	-0.11	0.070

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

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

Location	07-11							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River at Old Maratoto Rd	12	0.004	0.004	0.001	0.012	0.002	<u>2.13</u>	0.003
Kauaeranga River at Smiths Cableway/Recorder	12	0.005	0.004	0.001	0.018	0.003	<u>1.68</u>	0.002
Ohinemuri River at Queens Head	12	0.004	0.004	0.001	0.008	0.003	0.74	0.003
Ohinemuri River at SH25 Br	12	0.003	0.003	0.001	0.006	0.002	0.66	0.003
Tairua River at Morrisons Br Hikuai	12	0.004	0.004	0.001	0.010	0.002	1.03	0.003
Tapu River at Tapu-Coroglen Rd	12	0.003	0.002	0.001	0.010	0.003	1.65	0.001
Waiau River at E309 Rd Ford	12	0.004	0.003	0.001	0.011	0.003	1.39	0.003
Waitekauri River at U/S Ohinemuri Conflu	12	0.003	0.003	0.001	0.006	0.002	0.59	0.002
Waiwawa River at SH25 Coroglen	12	0.007	0.006	0.001	0.016	0.004	1.24	0.005
Wharekawa River at SH25	12	0.003	0.004	0.001	0.006	0.003	0.09	0.003
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	0.005	0.004	0.001	0.010	0.004	0.71	0.004
Oraka Stm at Lake Rd	12	0.004	0.003	0.001	0.012	0.004	1.34	0.003
Piako River at Kiwitahi	12	0.010	0.010	0.006	0.015	0.004	0.63	0.009
Piako River at Paeroa-Tahuna Rd Br	12	0.014	0.014	0.008	0.020	0.004	-0.13	0.013
Piakonui Stm at Piakonui Rd	12	0.007	0.005	0.003	0.015	0.003	1.60	0.006
Waihou River at Okauia	12	0.003	0.002	0.001	0.012	0.004	<u>1.73</u>	0.002
Waihou River at Whites Rd	12	0.001	0.001	0.001	0.001	0.000	-1.00	0.001
Waiohotu Stm at Waiohotu Rd (Off SH5)	12	0.008	0.007	0.004	0.030	0.004	<u>2.63</u>	0.007
Waiomou Stm at Matamata-Tauranga Rd	12	0.004	0.004	0.001	0.014	0.003	1.59	0.004
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	0.013	0.012	0.008	0.025	0.004	1.33	0.012
Waitoa River at Landsdowne Rd Br	12	0.008	0.008	0.005	0.013	0.003	0.59	0.008
Waitoa River at Mellon Rd Recorder	12	0.009	0.008	0.004	0.016	0.005	0.52	0.007
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	0.008	0.007	0.002	0.014	0.006	0.42	0.007
Awaroa Stm (Rotowaro) at Sansons Br, Rotowaro-Huntly Rd	12	0.004	0.004	0.001	0.007	0.001	0.18	0.004
Karapiro Stm at Hickey Rd Bridge	12	0.010	0.009	0.005	0.014	0.007	0.18	0.008
Kirikiriua Stm at Tauhara Dr	12	0.009	0.008	0.007	0.015	0.002	<u>2.00</u>	0.009
Komakorau Stm at Henry Rd	12	0.020	0.016	0.013	0.040	0.011	1.24	0.016
Little Waipa Stm at Arapuni - Putaruru Rd	12	0.004	0.002	0.001	0.017	0.004	<u>1.76</u>	0.002
Mangakotukutuku Stm (Rukuhia) at Peacocks Rd	12	0.061	0.061	0.023	0.111	0.045	0.27	0.048
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	0.006	0.004	0.003	0.019	0.004	<u>1.93</u>	0.006
Mangaone Stm at Annebrooke Rd Br	12	0.009	0.009	0.007	0.013	0.003	0.80	0.009
Mangaonua Stm at Harbutt Rd Br	12	0.006	0.006	0.001	0.009	0.003	-0.57	0.006
Mangaonua Stm at Hoeka Rd	12	0.006	0.005	0.004	0.013	0.002	1.67	0.005
Mangatangi River at SH2 Maramarua	12	0.010	0.009	0.006	0.016	0.004	0.95	0.009
Mangatawhiri River at Lyons Rd At Buckingham Br	12	0.005	0.004	0.002	0.008	0.003	0.45	0.005
Mangawara Stm at Rutherford Rd Br	12	0.024	0.025	0.015	0.034	0.007	0.06	0.020
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	0.024	0.020	0.009	0.057	0.016	1.20	0.017
Matahuru Stm at Waiterimu Road Below Confluence	12	0.016	0.016	0.009	0.022	0.007	-0.15	0.013
Ohaeroa Stm at SH22 Br	12	0.005	0.005	0.002	0.011	0.003	1.02	0.005
Opuatia Stm at Ponganui Rd	12	0.005	0.005	0.002	0.009	0.003	0.37	0.005
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	0.004	0.003	0.001	0.019	0.005	<u>1.90</u>	0.003
Waerenga Stm at Taniwha Rd	12	0.006	0.006	0.003	0.011	0.002	0.84	0.006
Waitawhirihiri Stm at Edgecumbe Street	12	0.030	0.028	0.011	0.061	0.020	0.72	0.022
Whakapipi Stm at SH22 Br	12	0.008	0.008	0.004	0.014	0.005	0.38	0.007
Whakauru Stm at U/S SH1 Br	12	0.005	0.004	0.001	0.012	0.003	1.20	0.005
Whangamarino River at Island Block Rd	12	0.033	0.027	0.014	0.085	0.025	1.40	0.020
Whangamarino River at Jefferies Rd Br	12	0.009	0.008	0.005	0.015	0.004	0.78	0.008
Whangape Stm at Rangiriri-Glen Murray Rd	12	0.013	0.014	0.007	0.020	0.007	-0.01	0.012

Waipa River and Tributaries																
Kaniwhaniwha Stm at Wright Rd	12	0.035	0.027	0.012	0.099	0.022	<u>1.68</u>	0.028	12	0.007	0.005	0.001	0.021	0.005	1.52	0.005
Mangaohoi Stm at South Branch Maru Rd	12	0.008	0.008	0.004	0.020	0.003	<u>1.70</u>	0.007	12	0.002	0.002	0.001	0.005	0.001	1.41	0.001
Mangaokewa Stm at Lawrence St Bridge	12	0.036	0.032	0.014	0.098	0.015	<u>2.17</u>	0.034	12	0.007	0.006	0.002	0.021	0.004	<u>1.77</u>	0.007
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	0.081	0.082	0.057	0.122	0.023	<u>0.82</u>	0.077	12	0.014	0.014	0.009	0.023	0.005	0.98	0.013
Mangapu River at Otorohanga	12	0.030	0.029	0.016	0.067	0.015	1.44	0.028	12	0.005	0.005	0.002	0.013	0.003	1.32	0.005
Mangatutu Stm (Waikeria) at Walker Rd Br	12	0.024	0.020	0.015	0.069	0.005	<u>2.78</u>	0.020	12	0.005	0.004	0.003	0.013	0.002	<u>2.58</u>	0.004
Mangauika Stm at Te Awamutu Borough W/S Intake	12	0.014	0.008	0.002	0.045	0.017	1.22	0.006	12	0.003	0.002	0.001	0.009	0.004	1.18	0.001
Ohote Stm at Whatawhata/Horotiu Rd	12	0.197	0.194	0.157	0.260	0.048	0.56	0.170	12	0.032	0.031	0.025	0.043	0.008	0.53	0.027
Puniu River at Bartons Corner Rd Br	12	0.035	0.028	0.020	0.083	0.010	<u>1.70</u>	0.029	12	0.007	0.005	0.004	0.014	0.002	1.57	0.006
Waipa River at Mangaokewa Rd	12	0.047	0.042	0.026	0.094	0.021	1.26	0.044	12	0.009	0.008	0.004	0.018	0.005	1.11	0.008
Waipa River at Pirongia-Ngutunui Rd Br	12	0.029	0.030	0.015	0.038	0.012	-0.35	0.029	12	0.005	0.005	0.002	0.008	0.003	-0.32	0.005
Waipa River at SH3 Otorohanga	12	0.029	0.026	0.014	0.051	0.011	0.94	0.026	12	0.005	0.005	0.001	0.010	0.003	0.56	0.005
Waitomo Stm at SH31 Otorohanga	12	0.023	0.022	0.010	0.041	0.018	0.35	0.020	12	0.004	0.004	0.001	0.008	0.005	0.17	0.004
Waitomo Stm at Tumutumu Rd	12	0.018	0.015	0.005	0.053	0.014	1.45	0.013	12	0.003	0.003	0.001	0.011	0.004	1.45	0.003
Tributaries to the upper Waikato River																
Kawaunui Stm at SH5 Br	12	0.038	0.026	0.016	0.137	0.013	<u>2.27</u>	0.027	12	0.007	0.004	0.001	0.031	0.003	<u>2.33</u>	0.005
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	0.035	0.024	0.017	0.137	0.008	<u>2.66</u>	0.025	12	0.006	0.004	0.001	0.027	0.003	<u>2.49</u>	0.005
Mangakara Stm (Reporoa) at SH5	12	0.025	0.016	0.010	0.117	0.005	<u>2.76</u>	0.016	12	0.004	0.003	0.001	0.024	0.003	<u>2.66</u>	0.003
Mangakino Stm (Whakamaru) at Sandel Rd	12	0.014	0.010	0.005	0.042	0.005	<u>2.11</u>	0.011	12	0.002	0.001	0.001	0.009	0.002	<u>2.22</u>	0.002
Otamakokore Stm at Hossack Rd	12	0.061	0.036	0.020	0.240	0.022	<u>1.91</u>	0.030	12	0.015	0.007	0.003	0.054	0.015	1.49	0.007
Pueto Stm at Broadlands Rd Br	11	0.011	0.010	0.008	0.020	0.004	<u>1.75</u>	0.011	11	0.001	0.001	0.001	0.004	0.000	<u>2.41</u>	0.001
Tahunaatara Stm at Ohakuri Rd	12	0.043	0.031	0.019	0.111	0.018	1.52	0.031	12	0.008	0.006	0.003	0.023	0.004	1.53	0.006
Torepatutahi Stm at Vaile Rd Br	12	0.020	0.013	0.008	0.073	0.003	<u>2.27</u>	0.013	12	0.004	0.003	0.001	0.015	0.003	<u>2.04</u>	0.002
Waiotapu Stm at Campbell Rd Br	12	0.010	0.005	0.002	0.035	0.003	<u>1.72</u>	0.005	12	0.002	0.001	0.001	0.005	0.002	1.14	0.001
Waiotapu Stm at Homestead Rd Br	12	0.031	0.025	0.016	0.093	0.006	<u>2.45</u>	0.022	12	0.005	0.004	0.001	0.017	0.004	<u>1.86</u>	0.004
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	0.017	0.013	0.007	0.051	0.004	<u>1.83</u>	0.012	12	0.003	0.002	0.001	0.012	0.002	<u>1.97</u>	0.002
Whirinaki Stm at Corbett Rd	12	0.006	0.002	0.001	0.045	0.002	<u>2.94</u>	0.002	12	0.002	0.001	0.001	0.010	0.000	<u>3.02</u>	0.001
West Coast																
Awakino River at Gribbon Rd	12	0.009	0.006	0.002	0.047	0.004	<u>2.65</u>	0.006	12	0.002	0.001	0.001	0.009	0.001	<u>2.68</u>	0.001
Awakino River at SH3 Awakau Rd Junction	12	0.017	0.012	0.005	0.054	0.007	1.63	0.012	12	0.003	0.002	0.001	0.011	0.003	1.45	0.002
Manganui River at Off Manganui Rd	12	0.010	0.008	0.004	0.033	0.006	<u>2.01</u>	0.008	12	0.002	0.001	0.001	0.006	0.001	1.53	0.001
Mangaotaki River at SH3 Br	12	0.017	0.016	0.007	0.036	0.012	0.85	0.015	12	0.003	0.003	0.001	0.007	0.003	0.72	0.003
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	0.023	0.018	0.009	0.077	0.016	<u>2.13</u>	0.017	12	0.004	0.004	0.001	0.016	0.004	<u>2.10</u>	0.003
Mokau River at Awakau Rd	12	0.036	0.033	0.014	0.092	0.016	<u>1.89</u>	0.032	12	0.007	0.006	0.001	0.019	0.005	1.60	0.006
Mokau River at Mangaokewa Rd (Off SH30)	12	0.040	0.038	0.001	0.085	0.016	0.66	0.044	12	0.008	0.008	0.001	0.017	0.004	0.78	0.008
Mokau River at Totoro Rd Recorder	12	0.032	0.031	0.014	0.052	0.016	0.34	0.029	12	0.006	0.006	0.001	0.010	0.004	0.15	0.005
Mokauiti Stm at Three Way Point - Aria	12	0.050	0.051	0.021	0.081	0.033	0.02	0.055	12	0.009	0.009	0.003	0.016	0.007	0.14	0.010
Ohautira Stm at Waingaro Te Uku Rd	12	0.029	0.019	0.008	0.080	0.023	1.29	0.020	12	0.006	0.004	0.001	0.019	0.006	1.43	0.004
Oparau River at Langdon Rd (Off Okupata Rd)	12	0.031	0.023	0.008	0.098	0.028	1.54	0.018	12	0.006	0.005	0.001	0.020	0.006	1.51	0.004
Tawarau River at Off Speedies Rd	12	0.023	0.018	0.008	0.076	0.015	<u>2.15</u>	0.016	12	0.005	0.004	0.001	0.018	0.005	<u>2.02</u>	0.003
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	0.037	0.036	0.012	0.071	0.030	0.41	0.035	12	0.007	0.008	0.001	0.015	0.005	0.14	0.007
Waitetuna River at Te Uku-Waingaro Rd	12	0.030	0.023	0.009	0.065	0.031	0.59	0.024	12	0.006	0.005	0.001	0.014	0.007	0.56	0.004
Inflows to Lake Taupo																
Hinemaiaia River at SH1	12	0.012	0.011	0.008	0.023	0.004	1.57	0.012	12	0.002	0.002	0.001	0.005	0.002	0.93	0.002
Kuratau River at SH41 Moerangi	12	0.015	0.015	0.010	0.024	0.003	1.13	0.016	12	0.002	0.002	0.001	0.004	0.002	0.56	0.003
Kuratau River at 43 Te Rae Street	12	0.020	0.017	0.005	0.050	0.009	1.49	0.018	12	0.004	0.003	0.001	0.015	0.002	<u>2.29</u>	0.003
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	0.042	0.039	0.028	0.069	0.013	1.09	0.040	12	0.008	0.008	0.004	0.014	0.003	0.81	0.008
Tauranga-Taupo River at Te Kono Slackline	11	0.006	0.006	0.003	0.015	0.001	<u>2.04</u>	0.006	11	0.001	0.001	0.001	0.003	0.000	<u>2.85</u>	0.001
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	12	0.005	0.004	0.002	0.009	0.002	0.91	0.005	12	0.001	0.001	0.001	0.002	0.000	<u>3.02</u>	0.001
Tokaanu Stm at Off SH41 Turangi	12	0.002	0.001	0.001	0.010	0.003	<u>2.08</u>	0.001	12	0.001	0.001	0.001	0.002	0.000	<u>3.02</u>	0.001
Waihaha River at SH32	12	0.009	0.007	0.004	0.021	0.004	<u>1.74</u>	0.007	12	0.002	0.001	0.001	0.004	0.001	1.30	0.001
Waitahanui River at Blake Rd	12	0.003	0.002	0.001	0.012	0.002	<u>2.11</u>	0.002	12	0.001	0.001	0.001	0.002	0.000	<u>3.02</u>	0.001
Whangamata Stm (Kinloch) at Whangamata Rd	12	0.007	0.006	0.002	0.017	0.004	1.19	0.006	12	0.001	0.001	0.001	0.003	0.000	<u>1.79</u>	0.001
Whanganui Stm at Lakeside Lake Taupo	12	0.014	0.011	0.006	0.034	0.009	1.46	0.013	12	0.003	0.002	0.001	0.007	0.003	1.23	0.003
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	0.017	0.014	0.009	0.034	0.009	1.13	0.016	12	0.003	0.003	0.001	0.007	0.003	0.65	0.003

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

Black Disk (m)

Location	07-11							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River at Old Maratoto Rd	11	2.11	1.89	0.87	3.52	0.82	0.63	2.03
Kauaeranga River at Smiths Cableway/Recorder	11	2.41	2.51	0.66	3.77	1.33	-0.45	2.83
Ohinemuri River at Queens Head	11	1.98	1.90	0.16	4.41	1.01	0.50	2.45
Ohinemuri River at SH25 Br	11	1.99	1.78	0.49	4.11	1.02	0.72	2.32
Tairua River at Morrisons Br Hikuai	11	1.90	1.73	0.38	3.91	1.09	0.57	1.90
Tapu River at Tapu-Coroglen Rd	11	2.82	2.86	0.46	4.21	2.23	-0.38	3.43
Waiau River at E309 Rd Ford	11	1.76	1.81	0.31	3.05	0.76	-0.41	1.68
Waitekauri River at U/S Ohinemuri Conflu	11	2.27	2.64	1.01	3.51	1.61	-0.09	2.61
Waiwawa River at SH25 Coroglen	9	1.78	1.84	0.28	2.95	1.75	-0.34	2.34
Wharekawa River at SH25	10	1.87	1.66	0.39	3.97	1.01	0.56	1.55
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	0.79	0.87	0.19	1.31	0.66	-0.45	0.84
Oraka Stm at Lake Rd	12	0.73	0.75	0.24	1.10	0.32	-0.37	0.87
Piako River at Kiwitahi	12	0.91	0.98	0.16	1.74	0.77	-0.09	0.92
Piako River at Paeroa-Tahuna Rd Br	11	0.70	0.72	0.12	1.61	0.39	0.62	0.56
Piakonui Stm at Piakonui Rd	12	1.16	1.07	0.40	2.26	0.34	0.68	1.16
Waihou River at Okauia	10	0.88	0.98	0.35	1.30	0.43	-0.30	1.00
Waihou River at Whites Rd	12	4.09	3.96	2.36	6.11	2.60	0.08	5.05
Waihotu Stm at Waihotu Rd (Off SH5)	-	-	-	-	-	-	-	-
Waiomou Stm at Matamata-Tauranga Rd	12	0.92	1.00	0.16	1.40	0.53	-0.56	1.13
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	11	0.68	0.60	0.08	1.31	0.54	0.30	0.64
Waitoa River at Landsdowne Rd Br	12	1.03	0.92	0.21	2.75	0.97	1.00	0.97
Waitoa River at Mellon Rd Recorder	12	0.65	0.58	0.21	1.41	0.35	0.97	0.72
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otawa Rd Br opp Moseley Rd	9	0.27	0.26	0.13	0.48	0.09	0.81	0.30
Awaroa Stm (Rotowaro) at Sansons Br, Rotowaro-Huntly Rd	12	0.65	0.63	0.15	1.28	0.69	0.17	0.95
Karapiro Stm at Hickey Rd Bridge	12	0.81	0.85	0.09	1.49	0.71	-0.18	0.74
Kirikiri Stm at Tauhara Dr	11	0.38	0.31	0.24	0.73	0.21	1.14	0.36
Komakorau Stm at Henry Rd	12	0.21	0.17	0.08	0.45	0.15	0.86	0.17
Little Waipa Stm at Arapuni - Putaruru Rd	12	1.14	1.16	0.30	1.74	0.72	-0.37	1.51
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	12	0.33	0.34	0.15	0.56	0.12	0.31	0.37
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	0.85	0.90	0.38	1.31	0.42	-0.16	0.94
Mangaone Stm at Annebrooke Rd Br	12	0.81	0.90	0.25	1.21	0.39	-0.36	0.71
Mangaonua Stm at Harbutt Rd Br	12	0.83	0.88	0.28	1.22	0.47	-0.54	0.91
Mangaonua Stm at Hoeka Rd	12	0.69	0.74	0.11	1.12	0.56	-0.36	0.59
Mangatangi River at SH2 Maramarua	12	0.41	0.44	0.05	0.74	0.27	-0.20	0.51
Mangatawhiri River at Lyons Rd At Buckingham Br	12	1.36	1.68	0.25	2.39	1.04	-0.45	1.63
Mangawara Stm at Rutherford Rd Br	11	0.19	0.17	0.07	0.35	0.13	0.46	0.20
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	0.25	0.25	0.09	0.38	0.05	-0.49	0.24
Matahuru Stm at Waiterimu Road Below Confluence	10	0.26	0.24	0.08	0.45	0.08	0.33	0.24
Ohaeroa Stm at SH22 Br	12	0.56	0.61	0.00	1.33	0.72	0.21	0.70
Opuatia Stm at Ponganui Rd	10	0.46	0.39	0.06	0.80	0.40	-0.02	0.59
Pokaiwhenua Stm at Arapuni - Putaruru Rd	11	1.05	1.19	0.19	1.57	0.88	-0.40	1.26
Waerenga Stm at Taniwha Rd	12	0.73	0.70	0.08	1.61	0.38	0.41	0.79
Waitawhiriwhiri Stm at Edgecumbe Street	11	0.37	0.32	0.25	0.61	0.18	0.90	0.31
Whakapipi Stm at SH22 Br	11	0.77	0.88	0.13	1.39	0.76	-0.27	1.05
Whakauru Stm at U/S SH1 Br	12	0.68	0.65	0.28	1.11	0.32	0.09	0.73
Whangamarino River at Island Block Rd	11	0.19	0.16	0.10	0.51	0.08	<u>2.16</u>	0.18
Whangamarino River at Jefferies Rd Br	10	0.32	0.36	0.05	0.55	0.15	-0.45	0.37
Whangape Stm at Rangiriri-Glen Murray Rd	11	0.14	0.13	0.06	0.30	0.07	1.24	0.15

Conductivity at 25 °C (mS m⁻¹)

Location	07-11							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River at Old Maratoto Rd	12	7.9	8.0	6.5	9.2	0.7	-0.50	8.2
Kauaeranga River at Smiths Cableway/Recorder	12	7.5	7.8	4.3	9.4	1.3	-0.96	7.9
Ohinemuri River at Queens Head	12	26.4	29.1	10.0	40.4	14.2	-0.17	19.4
Ohinemuri River at SH25 Br	12	7.4	7.5	6.5	8.1	0.4	-0.74	7.6
Tairua River at Morrisons Br Hikuai	12	5.8	6.0	4.5	6.7	0.6	-0.98	6.1
Tapu River at Tapu-Coroglen Rd	12	9.9	10.1	8.0	11.5	0.9	-0.57	10.2
Waiau River at E309 Rd Ford	12	8.9	9.1	7.0	10.0	0.6	-1.08	9.4
Waitekauri River at U/S Ohinemuri Conflu	12	10.6	10.8	7.2	17.2	2.7	1.19	11.4
Waiwawa River at SH25 Coroglen	12	6.2	6.5	4.3	7.5	0.7	-1.04	6.7
Wharekawa River at SH25	12	7.2	7.3	6.3	8.0	0.4	-0.43	7.4
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	10.9	10.9	8.7	12.3	1.0	-0.70	11.3
Oraka Stm at Lake Rd	12	12.9	11.2	8.0	19.5	4.8	0.79	11.6
Piako River at Kiwitahi	12	14.3	14.3	12.1	15.9	1.5	-0.37	14.7
Piako River at Paeroa-Tahuna Rd Br	12	20.7	19.9	16.6	27.9	3.5	0.83	21.2
Piakonui Stm at Piakonui Rd	12	7.2	7.2	5.8	9.6	1.3	0.85	7.2
Waihou River at Okauia	12	10.3	10.2	8.1	11.5	1.4	-0.65	9.9
Waihou River at Whites Rd	12	8.2	8.2	8.1	8.3	0.1	0.15	8.1
Waihotu Stm at Waihotu Rd (Off SH5)	12	5.5	5.6	4.4	6.0	0.4	-1.14	5.5
Waiomou Stm at Matamata-Tauranga Rd	12	6.9	6.8	5.8	8.1	0.9	0.22	6.8
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	16.9	17.4	10.4	23.2	5.4	-0.11	17.8
Waitoa River at Landsdowne Rd Br	12	15.4	15.3	12.5	19.4	2.6	0.38	16.0
Waitoa River at Mellon Rd Recorder	12	25.1	25.0	17.6	35.0	5.4	0.34	26.8
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otawa Rd Br opp Moseley Rd	12	26.7	25.2	22.9	35.0	5.0	1.16	25.7
Awaroa Stm (Rotowaro) at Sansons Br, Rotowaro-Huntly Rd	12	64.7	62.4	37.8	124.7	26.4	1.22	61.5
Karapiro Stm at Hickey Rd Bridge	12	13.6	13.8	8.8	21.5	3.5	0.94	13.6
Kirikiri Stm at Tauhara Dr	12	19.6	21.3	12.6	22.6	5.4	-0.95	21.1
Komakorau Stm at Henry Rd	12	25.5	25.0	22.8	28.9	3.4	0.39	25.6
Little Waipa Stm at Arapuni - Putaruru Rd	12	10.2	10.3	8.5	11.0	0.7	-1.32	9.8
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	12	17.5	17.9	12.4	22.8	3.4	-0.01	19.0
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	13.5	14.3	9.4	15.2	1.7	-1.29	14.5
Mangaone Stm at Annebrooke Rd Br	12	26.2	27.3	18.2	28.4	2.5	<u>-2.02</u>	27.0
Mangaonua Stm at Harbutt Rd Br	12	9.4	9.3	8.2	11.3	0.9	0.65	9.3
Mangaonua Stm at Hoeka Rd	12	19.3	20.2	14.2	22.2	2.5	-1.00	20.3
Mangatangi River at SH2 Maramarua	12	12.4	12.6	9.5	13.9	0.9	-1.17	13.1
Mangatawhiri River at Lyons Rd At Buckingham Br	12	11.4	12.1	7.3	13.7	2.2	-0.98	12.1
Mangawara Stm at Rutherford Rd Br	12	21.0	21.6	14.3	23.4	1.3	<u>-1.88</u>	22.3
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	21.8	22.2	17.3	23.1	0.7	<u>-2.47</u>	21.9
Matahuru Stm at Waiterimu Road Below Confluence	12	13.2	13.2	9.5	15.5	1.3	-0.78	14.0
Ohaeroa Stm at SH22 Br	12	16.0	15.6	12.4	20.5	3.2	0.34	16.0
Opuatia Stm at Ponganui Rd	12	16.6	16.9	12.1	19.1	1.5	-1.06	17.0
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	10.5	11.0	7.5	11.2	0.7	<u>-2.13</u>	10.5
Waerenga Stm at Taniwha Rd	12	11.3	11.6	8.1	12.6	1.0	-1.68	11.9
Waitawhiriwhiri Stm at Edgecumbe Street	12	18.2	19.7	8.3	22.3	3.7	-1.55	20.4
Whakapipi Stm at SH22 Br	12	17.8	18.1	10.8	21.5	3.1	-0.94	19.1
Whakauru Stm at U/S SH1 Br	12	7.0	7.1	6.2	7.2	0.3	<u>-2.18</u>	6.9
Whangamarino River at Island Block Rd	12	15.2	15.4	11.0	18.0	2.2	-0.60	16.1
Whangamarino River at Jefferies Rd Br	12	14.6	15.1	10.1	17.0	1.0	-1.22	15.7
Whangape Stm at Rangiriri-Glen Murray Rd	12	18.8	18.5	14.9	26.1	3.8	0.94	20.0

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

Waipa River and Tributaries																	
Kaniwhaniwha Stm at Wright Rd	9	0.69	0.64	0.21	1.31	0.50	0.42	0.80	12	9.4	9.4	6.8	10.6	1.4	-1.05	9.9	
Mangaohoi Stm at South Branch Maru Rd	12	1.50	1.63	0.95	1.80	0.41	-0.92	1.50	12	8.1	8.1	6.9	9.0	0.9	-0.38	8.0	
Mangaokewa Stm at Lawrence St Bridge	11	1.00	1.16	0.35	1.58	0.77	-0.42	0.97	12	14.7	15.1	10.8	16.7	2.9	-0.72	15.2	
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	11	0.60	0.59	0.05	1.40	0.26	0.97	0.53	12	18.3	17.1	12.2	26.0	4.6	0.53	19.2	
Mangapu River at Otorohanga	10	0.48	0.49	0.00	1.00	0.35	0.23	0.56	12	18.0	18.3	14.9	20.1	3.4	-0.44	19.1	
Mangatutu Stm (Waikeria) at Walker Rd Br	11	1.34	1.52	0.09	1.96	0.75	-0.85	1.22	12	6.9	7.2	5.1	7.9	1.2	-0.79	6.7	
Manguaika Stm at Te Awamutu Borough W/S Intake	11	3.33	3.31	1.81	5.10	1.77	0.16	3.54	12	6.1	6.3	4.5	7.2	0.9	-0.82	6.5	
Ohote Stm at Whatawhata/Horotiu Rd	12	0.51	0.50	0.28	0.77	0.11	0.54	0.51	12	15.8	15.9	12.7	19.4	2.3	-0.03	17.4	
Puniu River at Bartons Corner Rd Br	10	0.99	0.98	0.06	1.61	0.13	-0.76	0.91	12	8.4	8.4	7.1	9.3	1.2	-0.26	8.3	
Waipa River at Mangaokewa Rd	12	1.76	1.66	0.56	2.98	1.30	0.07	1.43	12	5.0	5.0	4.4	5.4	0.4	-0.59	5.1	
Waipa River at Pirongia-Ngutunui Rd Br	12	0.56	0.55	0.14	1.06	0.31	0.42	0.67	12	11.7	12.0	9.8	12.7	1.0	-1.06	11.9	
Waipa River at SH3 Otorohanga	10	1.09	1.06	0.21	2.03	0.97	0.08	1.08	12	8.2	8.3	6.8	9.3	1.0	-0.60	8.3	
Waitomo Stm at SH31 Otorohanga	11	0.48	0.46	0.25	1.04	0.20	1.67	0.54	12	17.9	17.4	13.5	21.3	2.8	-0.24	18.9	
Waitomo Stm at Tumutumu Rd	11	0.82	0.71	0.31	2.04	0.63	1.22	0.87	12	17.8	17.9	13.8	20.8	1.8	-0.56	18.9	
Tributaries to the upper Waikato River																	
Kawaunui Stm at SH5 Br	12	1.05	1.18	0.11	1.60	0.32	-1.15	1.13	12	13.4	13.6	10.6	14.4	0.5	<u>-2.30</u>	13.6	
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	9	0.91	0.97	0.15	1.21	0.39	-1.28	1.04	12	8.9	9.0	7.4	9.3	0.3	<u>-2.26</u>	8.8	
Mangakara Stm (Reporoa) at SH5	12	0.71	0.73	0.19	1.23	0.36	-0.14	0.73	12	9.6	9.8	7.4	10.4	0.7	<u>-1.69</u>	9.7	
Mangakino Stm (Whakamaru) at Sandel Rd	12	1.57	1.57	0.40	2.46	0.69	-0.25	1.82	12	6.3	6.6	4.2	7.1	1.0	-1.38	6.7	
Otamakokore Stm at Hossack Rd	12	0.97	1.04	0.20	1.39	0.42	-0.90	0.99	12	34.0	35.0	21.4	38.9	4.4	-1.54	37.9	
Pueto Stm at Broadlands Rd Br	11	1.28	1.34	0.59	1.70	0.19	-1.16	1.56	11	11.5	11.5	11.1	11.7	0.3	-0.80	11.5	
Tahunaatara Stm at Ohakuri Rd	12	0.95	1.06	0.13	1.48	0.39	-0.92	1.14	12	7.5	7.7	6.1	7.9	0.5	<u>-1.78</u>	7.6	
Torepatutahi Stm at Vaile Rd Br	-	-	-	-	-	-	-	-	12	10.6	10.6	9.8	11.6	0.8	0.10	9.6	
Waiotapu Stm at Campbell Rd Br	12	1.06	1.19	0.19	1.44	0.25	-1.40	1.14	12	61.3	61.8	54.9	69.0	7.0	0.16	69.5	
Waiotapu Stm at Homestead Rd Br	-	-	-	-	-	-	-	-	12	40.2	41.5	30.9	46.0	8.0	-0.66	46.6	
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	0.82	0.83	0.26	1.31	0.47	-0.19	0.89	12	37.4	38.6	30.3	40.5	3.7	-1.18	39.1	
Whirinaki Stm at Corbett Rd	-	-	-	-	-	-	-	-	12	7.0	7.0	6.8	7.4	0.3	1.11	6.7	
West Coast																	
Awakino River at Gribbon Rd	11	1.96	2.26	0.10	3.53	1.33	-0.35	1.69	12	6.8	6.8	5.4	7.5	0.4	-1.18	7.0	
Awakino River at SH3 Awakau Rd Junction	11	1.09	0.99	0.11	2.16	1.10	0.13	0.99	12	12.2	12.1	9.4	17.1	1.3	0.93	12.5	
Manganui River at Off Manganui Rd	11	1.28	1.33	0.11	2.22	0.65	-0.52	1.03	12	10.4	10.5	8.5	12.2	1.2	-0.13	10.6	
Mangaotaki River at SH3 Br	11	1.04	0.97	0.26	1.72	0.60	-0.26	0.85	12	13.1	13.1	11.7	14.2	1.1	-0.18	13.3	
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	0.83	0.82	0.24	1.66	0.56	0.38	0.87	12	12.9	13.0	10.3	15.4	1.3	0.00	13.4	
Mokau River at Awakau Rd	11	0.64	0.51	0.13	1.72	0.16	1.35	0.46	12	12.5	12.5	8.5	15.9	3.1	-0.06	13.0	
Mokau River at Mangaokewa Rd (Off SH30)	10	1.31	1.44	0.51	1.92	0.54	-0.69	1.15	12	6.4	6.4	5.7	7.4	0.8	0.30	6.7	
Mokau River at Totoro Rd Recorder	11	0.73	0.60	0.10	2.16	0.49	1.38	0.75	12	11.5	11.7	9.5	12.5	1.4	-0.88	12.0	
Mokauiti Stm at Three Way Point - Aria	11	0.55	0.47	0.09	1.70	0.29	<u>1.74</u>	0.56	12	10.0	10.1	8.6	11.0	1.0	-0.43	10.5	
Ohautira Stm at Waingarua Te Uku Rd	11	0.78	0.86	0.21	1.38	0.76	0.00	0.75	12	12.9	13.4	9.8	14.0	1.3	-1.43	13.7	
Oparau River at Langdon Rd (Off Okupata Rd)	12	1.16	1.15	0.10	2.43	0.84	0.24	1.28	12	7.8	8.1	5.4	9.4	1.1	-0.92	8.3	
Tawarau River at Off Speedies Rd	12	0.84	0.92	0.21	1.57	0.78	0.04	0.96	12	12.4	12.5	10.0	14.5	2.3	-0.21	13.0	
Waingarua River (Pukemiro) at Ruakiwi Rd Off SH22	11	0.66	0.76	0.26	0.98	0.39	-0.59	0.72	12	14.0	14.3	10.8	15.8	1.8	-0.86	14.5	
Waitetuna River at Te Uku-Waingarua Rd	11	0.52	0.51	0.04	1.01	0.56	0.25	0.68	12	9.7	10.0	6.2	10.7	1.2	<u>-1.98</u>	10.0	
Inflows to Lake Taupo																	
Hinemaiaia River at SH1	11	1.99	2.09	0.52	3.11	0.78	-0.59	2.41	12	5.8	5.9	3.9	6.5	0.8	-1.45	6.1	
Kuratau River at SH41 Moerangi	12	2.15	2.07	1.39	3.45	0.60	0.88	2.26	12	4.2	4.2	3.6	4.8	0.4	-0.16	4.3	
Kuratau River at 43 Te Rae Street	-	-	-	-	-	-	-	-	12	7.1	6.9	4.9	10.6	1.0	1.10	6.8	
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	1.38	1.37	0.56	2.24	0.32	0.20	1.34	12	12.4	12.4	11.9	12.7	0.2	-0.65	12.1	
Tauranga-Taupo River at Te Kono Slackline	10	2.64	2.85	0.78	3.25	0.61	<u>-1.76</u>	2.78	11	4.9	5.1	3.4	5.7	0.9	-0.94	5.0	
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	-	-	-	-	-	-	-	-	12	12.0	12.1	10.2	13.6	1.1	-0.25	12.6	
Tokaanu Stm at Off SH41 Turangi	-	-	-	-	-	-	-	-	12	10.1	10.1	9.9	10.2	0.1	0.00	10.0	
Waihaha River at SH32	11	2.61	2.58	1.71	3.50	0.87	-0.12	3.09	12	5.0	4.8	3.8	8.2	0.7	<u>2.14</u>	5.0	
Waitahanui River at Blake Rd	12	2.26	2.36	0.75	3.00	0.60	-1.21	2.72	12	7.4	7.5	6.6	7.6	0.3	<u>-1.87</u>	7.4	
Whangamata Stm (Kinloch) at Whangamata Rd	-	-	-	-	-	-	-	-	12	8.8	8.8	8.6	9.0	0.2	-0.04	8.7	
Whanganui Stm at Lakeside Lake Taupo	-	-	-	-	-	-	-	-	12	5.5	5.4	4.2	6.7	0.9	-0.17	6.0	
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	-	-	-	-	-	-	-	-	12	7.6	7.7	6.9	8.5	0.7	0.21	8.0	

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

Dissolved Oxygen (% Saturation)

Location	06-10							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River at Old Maratoto Rd	12	95.9	95.6	88.6	109.4	8.1	0.72	95.2
Kauaeranga River at Smiths Cableway/Recorder	12	98.4	98.3	91.1	110.9	8.4	0.66	99.2
Ohinemuri River at Queens Head	12	106.8	102.8	92.0	131.0	16.3	0.78	105.2
Ohinemuri River at SH25 Br	12	103.7	103.7	90.5	117.0	14.1	0.02	103.1
Tairua River at Morrisons Br Hikuai	12	96.0	98.6	83.5	107.9	12.0	-0.05	98.3
Tapu River at Tapu-Coroglen Rd	12	101.6	101.4	92.2	123.8	10.8	1.18	101.7
Waiau River at E309 Rd Ford	12	100.5	101.4	91.2	115.3	8.4	0.65	101.0
Waitekauri River at U/S Ohinemuri Conflu	12	104.3	102.6	93.4	123.7	12.1	0.94	102.3
Waiwawa River at SH25 Coroglen	12	99.5	98.0	90.0	121.1	10.6	1.10	100.0
Wharekawa River at SH25	12	96.9	99.0	86.8	106.4	11.6	-0.25	96.4
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	95.3	93.5	88.9	109.7	9.9	0.92	96.7
Oraka Stm at Lake Rd	12	90.0	89.0	83.7	103.5	6.0	1.25	92.9
Piako River at Kiwitahi	12	80.1	82.8	55.9	102.2	20.4	-0.32	85.2
Piako River at Paeroa-Tahuna Rd Br	12	84.9	84.1	78.2	98.7	8.1	0.97	86.3
Piakonui Stm at Piakonui Rd	12	97.6	99.1	88.4	108.2	8.8	0.14	98.1
Waihou River at Okauia	12	94.5	91.3	85.2	126.0	6.9	<u>2.17</u>	93.3
Waihou River at Whites Rd	12	97.7	95.7	90.4	111.1	7.9	0.90	100.0
Waihotu Stm at Waihotu Rd (Off SH5)	12	89.9	87.3	80.6	101.2	7.4	0.45	91.7
Waiomou Stm at Matamata-Tauranga Rd	12	92.9	90.5	86.7	107.3	8.4	1.24	94.8
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	88.3	87.1	70.3	107.7	11.3	0.23	94.2
Waitoa River at Landsdowne Rd Br	12	87.2	85.2	79.4	100.1	7.3	0.88	88.4
Waitoa River at Mellon Rd Recorder	12	75.6	76.1	51.6	99.0	11.3	-0.08	77.3
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otawa Rd Br opp Moseley Rd	12	83.4	84.5	60.6	94.4	11.7	-0.98	93.3
Awaroa Stm (Rotowaro) at Sansons Br, Rotowaro-Huntly Rd	12	85.3	83.6	76.7	97.6	10.0	0.53	84.7
Karapiro Stm at Hickey Rd Bridge	12	90.9	93.4	72.3	104.0	10.0	-0.76	92.7
Kirikiri Stm at Tauhara Dr	12	70.7	70.0	61.7	84.2	13.1	0.46	67.5
Komakorau Stm at Henry Rd	12	55.5	62.1	2.0	71.0	17.7	<u>-1.82</u>	61.5
Little Waipa Stm at Arapuni - Putaruru Rd	12	97.0	94.1	84.1	112.0	13.1	0.42	101.8
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	12	90.0	90.5	80.1	102.7	6.0	0.45	88.7
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	98.8	97.3	91.3	115.5	8.5	1.16	101.3
Mangaone Stm at Annebrooke Rd Br	12	83.8	81.8	75.3	114.5	4.9	<u>2.55</u>	80.9
Mangaonua Stm at Harbutt Rd Br	12	97.9	99.3	88.3	106.7	9.3	-0.24	100.3
Mangaonua Stm at Hoeka Rd	12	85.3	85.0	77.7	98.6	3.0	1.31	83.6
Mangatangi River at SH2 Maramarua	12	87.1	84.1	76.7	105.8	8.4	0.93	83.8
Mangatawhiri River at Lyons Rd At Buckingham Br	12	104.6	101.6	89.9	127.8	11.9	0.82	104.8
Mangawara Stm at Rutherford Rd Br	12	74.4	76.0	60.4	80.0	5.4	-1.49	75.3
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	86.1	87.2	76.8	92.3	6.1	-0.58	85.0
Matahuru Stm at Waiterimu Road Below Confluence	12	84.4	84.1	76.6	91.8	6.8	0.14	85.8
Ohaeroa Stm at SH22 Br	12	94.2	93.1	83.3	108.0	11.2	0.43	98.5
Opuatia Stm at Ponganui Rd	12	92.9	91.5	86.6	104.6	7.0	0.82	95.9
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	97.7	94.5	89.5	118.4	10.5	1.27	100.5
Waerenga Stm at Taniwha Rd	12	97.1	96.3	89.4	105.2	11.3	0.16	97.8
Waitawhiriwhiri Stm at Edgcombe Street	12	83.7	85.4	75.1	90.4	7.3	-0.39	82.1
Whakapipi Stm at SH22 Br	12	87.9	90.0	70.8	97.0	8.0	-1.06	87.4
Whakauru Stm at U/S SH1 Br	12	94.8	93.2	88.8	106.0	9.2	0.73	97.6
Whangamarino River at Island Block Rd	12	47.0	52.2	11.3	81.5	44.1	-0.16	50.9
Whangamarino River at Jefferies Rd Br	12	77.2	78.8	56.4	86.3	10.5	-1.16	81.1
Whangape Stm at Rangiriri-Glen Murray Rd	12	81.5	87.3	2.1	108.8	12.7	<u>-2.08</u>	92.2

Dissolved Oxygen (g m⁻³)

Location	06-10							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River at Old Maratoto Rd	12	9.6	9.6	8.7	11.1	0.7	0.64	9.7
Kauaeranga River at Smiths Cableway/Recorder	12	9.8	9.8	9.1	11.3	0.6	1.23	9.9
Ohinemuri River at Queens Head	12	10.3	10.4	9.1	11.4	1.3	-0.07	10.5
Ohinemuri River at SH25 Br	12	10.1	9.9	9.1	11.5	1.1	0.57	9.8
Tairua River at Morrisons Br Hikuai	12	9.4	9.4	7.7	10.6	1.2	-0.24	9.8
Tapu River at Tapu-Coroglen Rd	12	10.2	10.0	9.4	11.8	0.9	1.04	10.3
Waiau River at E309 Rd Ford	12	10.2	10.1	9.3	11.4	0.5	0.86	10.2
Waitekauri River at U/S Ohinemuri Conflu	12	10.3	10.1	9.3	11.4	1.4	0.31	10.0
Waiwawa River at SH25 Coroglen	12	9.8	9.8	9.1	11.2	0.8	0.99	10.0
Wharekawa River at SH25	12	9.5	9.5	8.4	10.7	1.0	0.30	9.6
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	9.8	9.7	9.0	10.7	0.8	0.39	9.9
Oraka Stm at Lake Rd	12	9.3	9.3	8.5	11.0	1.3	0.76	9.4
Piako River at Kiwitahi	12	7.9	8.3	4.9	10.2	2.4	-0.38	8.8
Piako River at Paeroa-Tahuna Rd Br	12	8.5	8.9	6.9	9.9	1.2	-0.64	8.8
Piakonui Stm at Piakonui Rd	12	10.0	10.1	8.8	11.2	1.0	-0.24	10.2
Waihou River at Okauia	12	9.8	9.5	8.7	12.1	0.8	1.30	9.6
Waihou River at Whites Rd	12	10.2	10.1	9.5	11.2	0.9	0.51	10.3
Waihotu Stm at Waihotu Rd (Off SH5)	12	9.7	9.5	8.3	11.6	1.2	0.54	9.7
Waiomou Stm at Matamata-Tauranga Rd	12	9.8	9.6	8.7	11.4	1.0	0.80	9.9
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	8.8	8.8	6.6	10.3	1.5	-0.54	9.6
Waitoa River at Landsdowne Rd Br	12	8.7	8.6	7.3	9.8	1.4	-0.16	9.1
Waitoa River at Mellon Rd Recorder	12	7.5	7.9	4.5	9.1	1.3	-1.12	7.7
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otawa Rd Br opp Moseley Rd	12	8.1	8.0	6.2	10.0	1.4	-0.02	9.0
Awaroa Stm (Rotowaro) at Sansons Br, Rotowaro-Huntly Rd	12	8.8	9.0	6.8	10.4	2.3	-0.31	8.6
Karapiro Stm at Hickey Rd Bridge	12	9.1	9.2	7.8	10.6	1.4	0.05	9.4
Kirikiri Stm at Tauhara Dr	12	7.1	6.9	5.7	8.9	1.9	0.28	6.7
Komakorau Stm at Henry Rd	12	5.8	6.4	0.2	8.2	2.6	-1.35	6.0
Little Waipa Stm at Arapuni - Putaruru Rd	12	9.9	9.9	8.4	11.2	1.7	-0.10	10.4
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	12	9.0	9.0	7.3	9.8	0.9	-1.07	9.0
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	10.0	9.8	9.1	11.2	1.1	0.50	10.0
Mangaone Stm at Annebrooke Rd Br	12	8.6	8.5	7.6	11.2	0.8	1.64	8.5
Mangaonua Stm at Harbutt Rd Br	12	9.8	10.0	8.2	10.9	1.1	-0.69	10.1
Mangaonua Stm at Hoeka Rd	12	8.7	8.9	7.4	9.4	0.8	-0.97	8.6
Mangatangi River at SH2 Maramarua	12	8.6	8.3	7.7	9.7	1.5	0.47	8.3
Mangatawhiri River at Lyons Rd At Buckingham Br	12	10.2	10.1	9.0	11.5	1.8	0.22	10.2
Mangawara Stm at Rutherford Rd Br	12	7.5	7.7	5.2	8.9	1.1	-0.85	7.6
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	8.8	8.7	7.3	9.9	1.0	-0.20	8.7
Matahuru Stm at Waiterimu Road Below Confluence	12	8.5	8.5	7.2	10.8	1.1	0.81	8.6
Ohaeroa Stm at SH22 Br	12	9.8	10.2	8.8	10.9	1.5	-0.16	10.2
Opuatia Stm at Ponganui Rd	12	9.4	9.4	8.2	10.6	1.3	-0.02	9.7
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	10.1	10.0	8.9	11.3	1.5	0.22	10.3
Waerenga Stm at Taniwha Rd	12	9.9	9.9	8.6	11.2	1.1	0.21	10.0
Waitawhiriwhiri Stm at Edgcombe Street	12	8.2	8.2	6.6	9.4	1.0	-0.40	8.0
Whakapipi Stm at SH22 Br	12	8.9	9.1	6.1	10.4	1.4	-0.84	8.8
Whakauru Stm at U/S SH1 Br	12	10.0	9.6	9.1	11.6	1.2	0.78	10.1
Whangamarino River at Island Block Rd	12	4.6	4.9	1.1	7.9	4.6	-0.13	5.1
Whangamarino River at Jefferies Rd Br	12	7.9	7.8	4.8	10.3	1.5	-0.29	8.3
Whangape Stm at Rangiriri-Glen Murray Rd	12	8.1	9.1	0.2	10.0	1.6	<u>-2.09</u>	9.4

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

Waipa River and Tributaries																	
Kaniwhaniwha Stm at Wright Rd	12	86.0	85.5	75.8	99.2	7.0	0.53	87.5		12	8.9	9.0	7.0	10.8	1.4	-0.16	8.9
Mangaohoi Stm at South Branch Maru Rd	12	98.7	100.7	90.9	109.6	10.1	0.04	99.7		12	9.9	10.0	9.2	11.2	0.7	0.71	9.9
Mangaokewa Stm at Lawrence St Bridge	12	95.4	96.2	88.1	104.2	7.8	0.03	96.0		12	10.0	10.0	8.4	11.5	1.0	0.01	10.0
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	93.1	89.2	70.0	120.2	19.3	0.50	92.4		12	9.0	9.1	6.9	10.7	1.8	-0.06	9.2
Mangapu River at Otorohanga	12	92.0	92.0	83.6	107.6	6.6	1.06	92.3		12	9.2	8.9	8.4	10.6	1.5	0.48	9.2
Mangatutu Stm (Waikeria) at Walker Rd Br	12	93.3	92.6	84.6	101.1	6.7	-0.15	94.7		12	9.5	9.2	8.5	11.1	0.9	0.89	9.6
Manguaika Stm at Te Awamutu Borough W/S Intake	12	98.2	94.5	90.4	112.5	13.7	0.67	96.9		12	10.4	10.3	9.2	12.4	0.8	1.14	10.2
Ohote Stm at Whatawhata/Horotiu Rd	12	54.9	58.9	20.3	84.3	30.1	-0.35	48.1		12	5.5	5.9	1.9	8.7	3.4	-0.30	4.9
Puniu River at Bartons Corner Rd Br	12	90.3	90.7	78.6	98.7	9.6	-0.31	92.9		12	9.0	9.0	7.9	10.8	0.7	1.09	9.4
Waipa River at Mangaokewa Rd	12	98.5	97.0	91.5	110.9	9.7	0.81	98.7		12	9.8	9.4	8.6	11.3	1.4	0.59	9.7
Waipa River at Pirongia-Ngutunui Rd Br	12	89.6	87.4	82.9	103.4	8.3	0.90	90.0		12	9.1	9.1	7.9	10.8	1.3	0.30	9.1
Waipa River at SH3 Otorohanga	12	99.4	97.4	88.2	122.1	6.7	1.37	98.0		12	10.0	9.9	8.9	11.3	1.1	0.44	9.9
Waitomo Stm at SH31 Otorohanga	12	92.1	90.1	73.4	118.8	7.2	0.96	96.5		12	9.4	9.6	6.9	11.4	1.1	-0.62	9.8
Waitomo Stm at Tumutumu Rd	12	97.9	94.2	91.0	120.3	9.5	1.63	98.4		12	10.1	10.0	9.3	12.0	0.6	1.53	10.1
Tributaries to the upper Waikato River																	
Kawaunui Stm at SH5 Br	12	85.2	83.7	80.4	93.6	7.6	0.65	84.1		12	8.4	8.4	7.6	9.9	0.8	0.83	8.2
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	90.9	89.5	84.4	102.7	9.1	0.78	93.0		12	9.4	9.1	8.6	10.8	1.1	0.74	9.6
Mangakara Stm (Reporoa) at SH5	12	89.6	88.4	85.4	99.1	6.7	0.80	91.1		12	9.2	9.0	8.4	10.7	0.8	1.03	9.1
Mangakino Stm (Whakamaru) at Sandel Rd	12	99.3	97.4	92.7	111.2	7.7	0.70	101.5		11	10.5	10.6	9.5	12.3	0.9	0.81	10.6
Otamakokore Stm at Hossack Rd	12	92.3	95.9	53.8	110.0	15.6	-1.22	96.0		12	8.1	8.2	4.5	9.7	1.4	-1.56	8.5
Pueto Stm at Broadlands Rd Br	11	91.9	91.9	85.2	103.9	7.7	0.82	93.9		11	9.2	9.0	8.5	10.4	1.0	0.68	9.4
Tahunaatara Stm at Ohakuri Rd	12	98.2	97.2	91.1	113.0	9.3	0.89	101.1		12	10.1	9.7	9.2	11.7	1.2	0.77	10.3
Torepatutahi Stm at Vaile Rd Br	12	91.4	94.8	57.3	112.3	18.6	-0.97	100.4		12	9.1	9.4	5.3	10.6	1.9	-1.37	10.0
Waiotapu Stm at Campbell Rd Br	12	86.6	85.4	80.8	95.9	7.6	0.64	86.8		12	6.7	6.6	6.1	7.8	0.8	0.72	6.5
Waiotapu Stm at Homestead Rd Br	12	84.8	86.0	54.4	109.6	12.8	-0.51	87.5		12	7.8	7.7	4.7	9.7	1.3	-0.86	8.0
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	97.2	96.2	91.4	108.0	6.8	0.89	98.5		12	8.4	8.2	7.9	9.5	0.7	1.03	8.4
Whirinaki Stm at Corbett Rd	12	94.3	93.3	87.1	108.9	9.7	0.87	96.1		12	9.8	9.6	9.0	10.9	1.1	0.61	9.9
West Coast																	
Awakino River at Gribbon Rd	12	100.3	99.2	91.3	114.1	9.2	0.82	99.2		12	10.5	10.5	9.5	12.0	1.3	0.35	10.5
Awakino River at SH3 Awakau Rd Junction	12	107.9	103.9	91.2	139.6	23.1	0.87	102.6		12	11.0	11.0	9.3	12.8	2.4	0.08	10.7
Manganui River at Off Manganui Rd	12	100.0	98.4	90.3	112.3	10.5	0.55	97.5		12	10.4	10.5	9.3	11.9	0.9	0.20	10.3
Mangaotaki River at SH3 Br	12	100.2	100.0	89.1	111.6	10.5	0.11	100.2		12	10.4	10.4	8.5	11.8	0.8	-0.48	10.3
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	103.4	99.5	92.7	136.7	13.3	1.45	101.5		12	10.7	10.5	9.6	13.6	1.1	1.50	10.5
Mokau River at Awakau Rd	12	93.9	92.9	88.5	105.0	7.3	0.70	92.7		12	9.6	9.5	7.9	11.3	1.1	0.28	9.4
Mokau River at Mangaokewa Rd (Off SH30)	12	96.4	95.5	90.2	109.9	9.5	0.87	96.4		12	10.1	9.6	9.2	11.8	1.4	0.80	10.0
Mokau River at Totoro Rd Recorder	12	101.3	98.8	93.8	118.1	7.8	1.20	100.7		12	10.3	10.2	9.1	11.9	1.3	0.49	10.3
Mokauiti Stm at Three Way Point - Aria	12	94.0	94.0	85.5	108.6	8.7	0.81	94.0		12	9.4	9.3	8.4	11.1	1.2	0.68	9.4
Ohautira Stm at Waingaro Te Uku Rd	12	94.0	91.6	85.9	107.8	8.5	0.83	93.6		12	10.0	10.1	8.3	12.1	1.5	0.18	10.0
Oparau River at Langdon Rd (Off Okupata Rd)	12	104.8	99.7	92.5	143.4	12.5	1.64	104.1		12	10.9	10.6	9.4	15.5	1.6	<u>1.74</u>	10.6
Tawarau River at Off Speedies Rd	12	100.0	96.0	93.0	123.4	9.0	1.56	101.0		12	10.5	10.3	9.5	12.2	1.0	0.83	10.5
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	94.1	92.0	85.3	110.3	10.1	0.83	93.9		12	9.6	9.8	8.0	11.7	1.6	0.09	9.6
Waitetuna River at Te Uku-Waingaro Rd	12	95.8	94.6	86.9	106.9	12.2	0.42	95.5		12	10.0	10.0	8.7	11.6	1.3	0.20	9.8
Inflows to Lake Taupo																	
Hinemaiaia River at SH1	12	96.0	94.2	90.1	109.1	8.8	0.89	99.1		12	10.2	10.2	8.8	11.7	1.0	0.31	10.5
Kuratau River at SH41 Moerangi	12	91.0	89.4	86.3	99.3	6.4	0.62	93.4		11	9.7	9.6	8.9	11.1	0.6	0.92	9.8
Kuratau River at 43 Te Rae Street	12	95.7	95.5	86.4	102.9	9.5	-0.09	98.8		11	9.8	10.0	8.7	11.6	1.5	0.41	10.2
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	85.3	84.9	79.4	91.4	4.2	0.29	86.5		12	9.0	9.0	8.3	10.1	0.7	0.58	9.1
Tauranga-Taupo River at Te Kono Slackline	11	99.9	94.3	88.9	145.8	8.6	<u>2.14</u>	100.1		12	10.7	10.4	9.2	14.7	1.2	<u>1.77</u>	10.7
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	12	98.9	99.4	86.7	118.9	13.1	0.66	101.0		11	10.2	10.3	8.9	11.9	1.2	0.05	10.4
Tokaanu Stm at Off SH41 Turangi	12	81.8	81.7	76.0	89.7	5.3	0.43	81.8		11	8.4	8.4	7.8	8.9	0.5	-0.26	8.4
Waihaha River at SH32	12	99.7	99.7	90.2	120.8	8.8	1.32	99.8		11	10.4	10.4	9.3	11.6	0.6	0.13	10.4
Waitahanui River at Blake Rd	12	96.5	94.6	90.7	107.3	8.7	0.66	98.3		12	10.3	10.2	9.5	11.3	1.3	0.28	10.4
Whangamata Stm (Kinloch) at Whangamata Rd	12	93.2	92.1	88.3	102.4	6.1	0.84	95.2		12	10.0	9.8	9.4	10.9	0.7	0.64	10.2
Whanganui Stm at Lakeside Lake Taupo	12	97.4	98.0	87.8	112.0	11.3	0.44	100.0		11	10.3	10.2	9.0	12.0	1.5	0.40	10.6
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	92.2	90.2	85.8	103.7	7.0	0.90	94.6		11	9.8	9.8	8.9	11.3	0.8	0.75	9.9

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

Dissolved Reactive Phosphorus (g m⁻³)

Location								07-11	
	Count	Mean	Median	Min	Max	IQR	Skew	Median	
Coromandel									
Hikutaia River at Old Maratoto Rd	12	0.002	0.002	0.002	0.005	0.000	<u>3.02</u>	0.002	
Kauaeranga River at Smiths Cableway/Recorder	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002	
Ohinemuri River at Queens Head	12	0.009	0.002	0.002	0.045	0.010	<u>1.95</u>	0.002	
Ohinemuri River at SH25 Br	12	0.007	0.005	0.002	0.024	0.006	1.52	0.004	
Tairua River at Morrisons Br Hikuai	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002	
Tapu River at Tapu-Coroglen Rd	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002	
Waiau River at E309 Rd Ford	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002	
Waitekauri River at U/S Ohinemuri Conflu	12	0.004	0.002	0.002	0.010	0.003	1.42	0.002	
Waiwawa River at SH25 Coroglen	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002	
Wharekawa River at SH25	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002	
Hauraki									
Mangawhero Stm (Kaihere) at Mangawara Rd	12	0.031	0.032	0.016	0.047	0.006	-0.09	0.038	
Oraka Stm at Lake Rd	12	0.080	0.076	0.042	0.139	0.053	0.46	0.083	
Piako River at Kiwitahi	12	0.060	0.055	0.030	0.109	0.011	1.03	0.057	
Piako River at Paeroa-Tahuna Rd Br	12	0.197	0.157	0.043	0.550	0.140	1.27	0.182	
Piakonui Stm at Piakonui Rd	12	0.011	0.010	0.005	0.018	0.005	0.63	0.010	
Waihou River at Okauia	12	0.060	0.059	0.034	0.083	0.016	-0.03	0.065	
Waihou River at Whites Rd	12	0.074	0.075	0.071	0.080	0.002	0.76	0.075	
Waiohotu Stm at Waiohotu Rd (Off SH5)	12	0.012	0.012	0.005	0.021	0.004	0.50	0.012	
Waiomou Stm at Matamata-Tauranga Rd	12	0.021	0.020	0.014	0.030	0.007	0.35	0.022	
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	0.025	0.022	0.013	0.041	0.014	0.54	0.031	
Waitoa River at Landsdowne Rd Br	12	0.029	0.028	0.009	0.053	0.017	0.39	0.028	
Waitoa River at Mellon Rd Recorder	12	0.068	0.052	0.032	0.149	0.032	1.34	0.056	
Tributaries to the lower Waikato River									
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	0.013	0.002	0.002	0.078	0.012	<u>2.27</u>	0.002	
Awaroa Stm (Rotowaro) at Sansons Br, Rotowaro-Huntly Rd	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002	
Karapiro Stm at Hickey Rd Bridge	12	0.044	0.044	0.022	0.066	0.031	0.02	0.046	
Kirikiriira Stm at Tauhara Dr	12	0.016	0.015	0.010	0.034	0.006	<u>2.04</u>	0.015	
Komakorau Stm at Henry Rd	12	0.019	0.017	0.004	0.040	0.020	0.41	0.008	
Little Waipa Stm at Arapuni - Putaruru Rd	12	0.057	0.048	0.038	0.108	0.019	1.47	0.051	
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	12	0.390	0.285	0.062	1.440	0.285	<u>2.15</u>	0.230	
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	0.288	0.270	0.186	0.430	0.110	0.58	0.385	
Mangaone Stm at Annebrooke Rd Br	12	0.064	0.067	0.048	0.080	0.016	-0.19	0.066	
Mangaonua Stm at Harbutt Rd Br	12	0.010	0.010	0.008	0.013	0.003	0.29	0.012	
Mangaonua Stm at Hoeka Rd	12	0.014	0.012	0.004	0.040	0.005	<u>2.13</u>	0.011	
Mangatangi River at SH2 Maramarua	12	0.023	0.021	0.017	0.033	0.004	1.20	0.028	
Mangatawhiri River at Lyons Rd At Buckingham Br	12	0.009	0.009	0.002	0.019	0.006	0.52	0.011	
Mangawara Stm at Rutherford Rd Br	12	0.071	0.056	0.026	0.149	0.067	0.75	0.049	
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	0.122	0.077	0.017	0.500	0.072	<u>1.98</u>	0.056	
Matahuru Stm at Waiterimu Road Below Confluence	12	0.025	0.024	0.018	0.034	0.007	0.43	0.026	
Ohaeroa Stm at SH22 Br	12	0.007	0.008	0.002	0.013	0.010	-0.02	0.009	
Opuatia Stm at Ponganui Rd	12	0.006	0.006	0.002	0.010	0.005	-0.11	0.006	
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	0.083	0.080	0.062	0.127	0.021	1.29	0.090	
Waerenga Stm at Taniwha Rd	12	0.019	0.015	0.004	0.059	0.009	<u>2.13</u>	0.019	
Waitawhiriwhiri Stm at Edgecumbe Street	12	0.057	0.055	0.014	0.187	0.035	<u>1.84</u>	0.037	
Whakapipi Stm at SH22 Br	12	0.021	0.018	0.009	0.046	0.018	0.89	0.022	
Whakauru Stm at U/S SH1 Br	12	0.021	0.017	0.014	0.042	0.008	1.47	0.016	
Whangamarino River at Island Block Rd	12	0.008	0.008	0.002	0.018	0.011	0.23	0.006	
Whangamarino River at Jefferies Rd Br	12	0.028	0.026	0.017	0.043	0.013	0.35	0.031	
Whangape Stm at Rangiriiri-Glen Murray Rd	12	0.003	0.002	0.002	0.016	0.000	<u>2.91</u>	0.002	

Total Phosphorus (g m⁻³)

Location								07-11	
	Count	Mean	Median	Min	Max	IQR	Skew	Median	
Coromandel									
Hikutaia River at Old Maratoto Rd	12	0.008	0.007	0.002	0.020	0.005	1.27	0.008	
Kauaeranga River at Smiths Cableway/Recorder	12	0.006	0.005	0.002	0.015	0.004	1.43	0.004	
Ohinemuri River at Queens Head	12	0.047	0.013	0.007	0.280	0.028	<u>2.32</u>	0.014	
Ohinemuri River at SH25 Br	12	0.022	0.013	0.007	0.063	0.023	1.19	0.013	
Tairua River at Morrisons Br Hikuai	12	0.008	0.002	0.002	0.044	0.003	<u>1.88</u>	0.004	
Tapu River at Tapu-Coroglen Rd	12	0.005	0.002	0.002	0.022	0.003	<u>2.14</u>	0.002	
Waiau River at E309 Rd Ford	12	0.008	0.005	0.002	0.019	0.011	0.82	0.007	
Waitekauri River at U/S Ohinemuri Conflu	12	0.030	0.006	0.002	0.280	0.004	<u>3.00</u>	0.008	
Waiwawa River at SH25 Coroglen	12	0.013	0.003	0.002	0.059	0.015	<u>1.86</u>	0.004	
Wharekawa River at SH25	12	0.005	0.004	0.002	0.014	0.001	<u>1.78</u>	0.006	
Hauraki									
Mangawhero Stm (Kaihere) at Mangawara Rd	12	0.045	0.043	0.032	0.066	0.014	0.71	0.050	
Oraka Stm at Lake Rd	12	0.134	0.119	0.084	0.330	0.027	<u>2.33</u>	0.128	
Piako River at Kiwitahi	12	0.129	0.102	0.060	0.280	0.088	1.10	0.093	
Piako River at Paeroa-Tahuna Rd Br	12	0.292	0.260	0.134	0.590	0.123	1.08	0.260	
Piakonui Stm at Piakonui Rd	12	0.024	0.022	0.014	0.057	0.013	<u>1.79</u>	0.023	
Waihou River at Okauia	12	0.098	0.088	0.075	0.174	0.020	<u>1.85</u>	0.092	
Waihou River at Whites Rd	12	0.076	0.074	0.068	0.090	0.007	1.10	0.078	
Waiohotu Stm at Waiohotu Rd (Off SH5)	12	0.033	0.026	0.019	0.099	0.010	<u>2.46</u>	0.028	
Waiomou Stm at Matamata-Tauranga Rd	12	0.053	0.040	0.028	0.200	0.013	<u>2.86</u>	0.042	
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	0.087	0.069	0.035	0.174	0.065	0.85	0.075	
Waitoa River at Landsdowne Rd Br	12	0.098	0.085	0.033	0.199	0.055	0.81	0.066	
Waitoa River at Mellon Rd Recorder	12	0.172	0.192	0.068	0.290	0.124	-0.11	0.131	
Tributaries to the lower Waikato River									
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	0.090	0.062	0.020	0.280	0.060	1.64	0.055	
Awaroa Stm (Rotowaro) at Sansons Br, Rotowaro-Huntly Rd	12	0.023	0.021	0.010	0.041	0.023	0.31	0.014	
Karapiro Stm at Hickey Rd Bridge	12	0.106	0.083	0.055	0.320	0.036	<u>2.54</u>	0.092	
Kirikiriira Stm at Tauhara Dr	12	0.089	0.074	0.051	0.210	0.046	<u>1.69</u>	0.072	
Komakorau Stm at Henry Rd	12	0.102	0.096	0.071	0.195	0.029	<u>1.79</u>	0.103	
Little Waipa Stm at Arapuni - Putaruru Rd	12	0.091	0.069	0.050	0.230	0.045	<u>1.89</u>	0.070	
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	12	0.614	0.540	0.280	1.630	0.270	<u>1.93</u>	0.430	
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	0.319	0.320	0.193	0.430	0.105	-0.20	0.430	
Mangaone Stm at Annebrooke Rd Br	12	0.136	0.136	0.103	0.200	0.037	0.81	0.150	
Mangaonua Stm at Harbutt Rd Br	12	0.031	0.022	0.016	0.089	0.018	<u>2.03</u>	0.027	
Mangaonua Stm at Hoeka Rd	12	0.095	0.055	0.025	0.280	0.077	1.39	0.061	
Mangatangi River at SH2 Maramarua	12	0.099	0.090	0.051	0.240	0.039	<u>1.78</u>	0.087	
Mangatawhiri River at Lyons Rd At Buckingham Br	12	0.028	0.022	0.012	0.085	0.015	<u>1.95</u>	0.025	
Mangawara Stm at Rutherford Rd Br	12	0.306	0.240	0.148	0.620	0.135	1.23	0.239	
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	0.302	0.220	0.150	1.070	0.085	<u>2.45</u>	0.186	
Matahuru Stm at Waiterimu Road Below Confluence	12	0.161	0.109	0.071	0.510	0.045	<u>1.90</u>	0.110	
Ohaeroa Stm at SH22 Br	12	0.052	0.032	0.014	0.160	0.039	1.46	0.036	
Opuatia Stm at Ponganui Rd	12	0.068	0.039	0.022	0.200	0.060	1.31	0.034	
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	0.113	0.108	0.082	0.210	0.025	<u>2.05</u>	0.115	
Waerenga Stm at Taniwha Rd	12	0.080	0.044	0.018	0.380	0.025	<u>2.46</u>	0.047	
Waitawhiriwhiri Stm at Edgecumbe Street	12	0.123	0.101	0.078	0.270	0.050	<u>1.74</u>	0.111	
Whakapipi Stm at SH22 Br	12	0.085	0.044	0.034	0.360	0.026	<u>2.08</u>	0.051	
Whakauru Stm at U/S SH1 Br	12	0.045	0.039	0.028	0.093	0.014	1.67	0.041	
Whangamarino River at Island Block Rd	12	0.229	0.170	0.050	0.760	0.056	<u>2.07</u>	0.158	
Whangamarino River at Jefferies Rd Br	12	0.157	0.099	0.068	0.470	0.022	<u>1.76</u>	0.098	
Whangape Stm at Rangiriiri-Glen Murray Rd	12	0.153	0.155	0.064	0.310	0.096	0.69	0.116	

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

Waipa River and Tributaries																	
Kaniwhaniwha Stm at Wright Rd	12	0.008	0.007	0.004	0.015	0.005	0.85	0.006		12	0.041	0.036	0.020	0.084	0.031	0.82	0.034
Mangaohoi Stm at South Branch Maru Rd	12	0.044	0.043	0.031	0.057	0.010	0.13	0.041		12	0.051	0.051	0.041	0.071	0.011	0.88	0.053
Mangaokewa Stm at Lawrence St Bridge	12	0.014	0.013	0.006	0.021	0.005	0.10	0.014		12	0.037	0.030	0.022	0.069	0.021	0.96	0.036
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	0.163	0.106	0.060	0.540	0.075	<u>1.91</u>	0.150		12	0.341	0.195	0.151	1.120	0.206	<u>1.80</u>	0.310
Mangapu River at Otorohanga	12	0.022	0.021	0.012	0.036	0.012	0.53	0.026		12	0.080	0.077	0.037	0.147	0.052	0.67	0.082
Mangatutu Stm (Waikeria) at Walker Rd Br	12	0.010	0.009	0.002	0.015	0.005	-0.50	0.009		12	0.059	0.022	0.015	0.400	0.010	<u>2.86</u>	0.026
Mangauika Stm at Te Awamutu Borough W/S Intake	12	0.003	0.002	0.002	0.005	0.001	1.34	0.002		12	0.014	0.010	0.004	0.046	0.010	<u>1.87</u>	0.008
Ohote Stm at Whatawhata/Horotiu Rd	12	0.022	0.022	0.016	0.032	0.012	0.37	0.023		12	0.086	0.083	0.060	0.131	0.018	1.17	0.077
Puniu River at Bartons Corner Rd Br	12	0.023	0.022	0.016	0.033	0.007	0.52	0.024		12	0.113	0.048	0.031	0.830	0.018	<u>3.01</u>	0.056
Waipa River at Mangaokewa Rd	12	0.003	0.004	0.002	0.006	0.002	0.29	0.005		12	0.015	0.013	0.007	0.033	0.003	1.54	0.022
Waipa River at Pirongia-Ngutunui Rd Br	12	0.015	0.014	0.009	0.022	0.009	0.27	0.017		12	0.060	0.058	0.034	0.103	0.024	0.77	0.055
Waipa River at SH3 Otorohanga	12	0.007	0.006	0.002	0.017	0.003	0.95	0.007		12	0.031	0.021	0.013	0.082	0.018	1.58	0.028
Waitomo Stm at SH31 Otorohanga	12	0.009	0.008	0.004	0.027	0.005	<u>2.28</u>	0.007		12	0.057	0.048	0.014	0.169	0.030	<u>1.81</u>	0.038
Waitomo Stm at Tumutumu Rd	12	0.010	0.011	0.007	0.013	0.001	-0.71	0.010		12	0.032	0.023	0.012	0.092	0.012	<u>1.80</u>	0.023
Tributaries to the upper Waikato River																	
Kawaunui Stm at SH5 Br	12	0.074	0.051	0.034	0.290	0.024	<u>2.66</u>	0.067		12	0.194	0.083	0.065	1.320	0.026	<u>2.96</u>	0.112
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	0.031	0.030	0.025	0.049	0.005	<u>2.04</u>	0.033		12	0.070	0.046	0.042	0.300	0.013	<u>2.93</u>	0.056
Mangakara Stm (Reporoa) at SH5	12	0.047	0.045	0.037	0.072	0.005	<u>2.18</u>	0.050		12	0.093	0.074	0.062	0.250	0.021	<u>2.35</u>	0.082
Mangakino Stm (Whakamaru) at Sandel Rd	12	0.035	0.036	0.021	0.045	0.010	<u>-0.55</u>	0.042		12	0.043	0.044	0.036	0.048	0.008	<u>-0.30</u>	0.050
Otamakokore Stm at Hossack Rd	12	0.166	0.154	0.125	0.260	0.045	1.18	0.158		-	-	-	-	-	-	-	-
Pueto Stm at Broadlands Rd Br	11	0.078	0.077	0.070	0.087	0.006	0.45	0.080		11	0.095	0.095	0.085	0.110	0.007	0.75	0.100
Tahunaatara Stm at Ohakuri Rd	12	0.035	0.028	0.023	0.081	0.008	<u>1.87</u>	0.032		12	0.085	0.043	0.036	0.440	0.023	<u>2.79</u>	0.052
Torepatutahi Stm at Vaile Rd Br	12	0.083	0.078	0.061	0.149	0.012	<u>1.85</u>	0.083		12	0.100	0.093	0.073	0.171	0.018	<u>1.74</u>	0.100
Waiotapu Stm at Campbell Rd Br	12	0.004	0.002	0.002	0.017	0.000	<u>2.29</u>	0.002		-	-	-	-	-	-	-	-
Waiotapu Stm at Homestead Rd Br	12	0.034	0.036	0.016	0.050	0.013	<u>-0.19</u>	0.038		-	-	-	-	-	-	-	-
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	0.092	0.084	0.073	0.117	0.032	0.32	0.084		-	-	-	-	-	-	-	-
Whirinaki Stm at Corbett Rd	12	0.063	0.059	0.056	0.096	0.005	<u>2.62</u>	0.063		12	0.066	0.062	0.052	0.122	0.005	<u>2.78</u>	0.068
West Coast																	
Awakino River at Gribbon Rd	12	0.012	0.012	0.007	0.015	0.003	-0.87	0.012		12	0.030	0.016	0.012	0.185	0.004	<u>2.99</u>	0.017
Awakino River at SH3 Awakau Rd Junction	12	0.007	0.008	0.002	0.011	0.006	-0.41	0.008		12	0.030	0.018	0.009	0.163	0.008	<u>2.81</u>	0.020
Manganui River at Off Manganui Rd	12	0.013	0.014	0.008	0.017	0.004	-0.22	0.011		12	0.041	0.024	0.013	0.230	0.014	<u>2.90</u>	0.028
Mangaotaki River at SH3 Br	12	0.022	0.011	0.007	0.138	0.004	<u>2.99</u>	0.010		12	0.044	0.031	0.016	0.150	0.025	<u>1.87</u>	0.030
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	0.013	0.013	0.008	0.018	0.002	-0.01	0.013		12	0.036	0.027	0.021	0.116	0.009	<u>2.51</u>	0.027
Mokau River at Awakau Rd	12	0.007	0.008	0.002	0.015	0.004	0.38	0.007		12	0.054	0.040	0.023	0.153	0.040	1.52	0.043
Mokau River at Mangaokewa Rd (Off SH30)	12	0.013	0.013	0.002	0.036	0.005	<u>1.71</u>	0.015		12	0.037	0.028	0.018	0.107	0.020	<u>2.04</u>	0.034
Mokau River at Totoro Rd Recorder	12	0.010	0.011	0.005	0.015	0.005	-0.03	0.010		12	0.044	0.034	0.016	0.126	0.015	<u>1.70</u>	0.033
Mokauiti Stm at Three Way Point - Aria	12	0.008	0.008	0.002	0.015	0.010	0.22	0.008		12	0.054	0.039	0.031	0.148	0.019	<u>1.81</u>	0.044
Ohautira Stm at Waingaro Te Uku Rd	12	0.018	0.017	0.008	0.029	0.011	0.16	0.020		12	0.060	0.039	0.022	0.220	0.034	<u>2.19</u>	0.042
Oparau River at Langdon Rd (Off Okupata Rd)	12	0.005	0.006	0.002	0.008	0.004	-0.32	0.005		12	0.025	0.013	0.006	0.132	0.006	<u>2.60</u>	0.016
Tawarau River at Off Speedies Rd	12	0.014	0.014	0.010	0.019	0.003	0.15	0.014		12	0.035	0.028	0.020	0.092	0.011	<u>2.22</u>	0.028
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	0.010	0.010	0.004	0.023	0.004	1.55	0.010		12	0.049	0.032	0.028	0.147	0.018	<u>2.06</u>	0.039
Waitetuna River at Te Uku-Waingaro Rd	12	0.014	0.014	0.004	0.036	0.009	1.57	0.011		12	0.119	0.048	0.026	0.830	0.033	<u>2.90</u>	0.038
Inflows to Lake Taupo																	
Hinemaiaia River at SH1	12	0.025	0.026	0.016	0.030	0.005	-1.00	0.028		12	0.031	0.031	0.025	0.038	0.005	0.46	0.036
Kuratau River at SH41 Moerangi	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002		12	0.003	0.002	0.002	0.006	0.002	1.12	0.004
Kuratau River at 43 Te Rae Street	12	0.006	0.004	0.002	0.026	0.004	<u>2.73</u>	0.002		12	0.013	0.012	0.007	0.029	0.006	1.62	0.014
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	0.126	0.128	0.111	0.145	0.018	0.20	0.130		12	0.154	0.150	0.133	0.186	0.018	0.77	0.159
Tauranga-Taupo River at Te Kono Slackline	11	0.012	0.013	0.007	0.016	0.005	-0.49	0.013		11	0.014	0.014	0.011	0.021	0.002	<u>1.77</u>	0.017
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	12	0.003	0.002	0.002	0.005	0.000	<u>1.79</u>	0.002		12	0.014	0.010	0.007	0.049	0.005	<u>2.66</u>	0.013
Tokaanu Stm at Off SH41 Turangi	12	0.076	0.076	0.066	0.079	0.004	-1.62	0.077		12	0.089	0.073	0.068	0.270	0.006	<u>3.00</u>	0.077
Waihaha River at SH32	12	0.019	0.020	0.010	0.026	0.009	-0.30	0.021		12	0.021	0.022	0.015	0.025	0.006	-0.38	0.024
Waitahanui River at Blake Rd	12	0.042	0.042	0.037	0.044	0.003	-0.92	0.043		12	0.045	0.043	0.039	0.054	0.008	0.84	0.047
Whangamata Stm (Kinloch) at Whangamata Rd	12	0.062	0.064	0.056	0.067	0.003	-0.76	0.065		12	0.070	0.071	0.058	0.083	0.010	0.11	0.073
Whanganui Stm at Lakeside Lake Taupo	12	0.009	0.009	0.004	0.014	0.005	0.02	0.010		12	0.013	0.013	0.009	0.018	0.005	0.22	0.016
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	0.018	0.018	0.011	0.024	0.004	-0.36	0.020		12	0.036	0.028	0.026	0.093	0.009	<u>2.41</u>	0.034

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

Ammoniacal Nitrogen (g N m⁻³)

Location								07-11
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River at Old Maratoto Rd	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01
Kauaeranga River at Smiths Cableway/Recorder	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01
Ohinemuri River at Queens Head	12	0.10	0.07	0.01	0.27	0.17	0.59	0.02
Ohinemuri River at SH25 Br	12	0.02	0.01	0.01	0.15	0.01	<u>2.24</u>	0.01
Tairua River at Morrisons Br Hikuai	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01
Tapu River at Tapu-Coroglen Rd	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01
Waiau River at E309 Rd Ford	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01
Waitekauri River at U/S Ohinemuri Conflu	12	0.01	0.01	0.01	0.03	0.00	<u>2.11</u>	0.01
Waiwawa River at SH25 Coroglen	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01
Wharekawa River at SH25	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01
Oraka Stm at Lake Rd	12	0.09	0.03	0.01	0.33	0.15	1.17	0.02
Piako River at Kiwitahi	12	0.07	0.03	0.01	0.24	0.13	1.01	0.02
Piako River at Paeroa-Tahuna Rd Br	12	0.09	0.06	0.01	0.25	0.17	0.58	0.04
Piakonui Stm at Piakonui Rd	12	0.01	0.01	0.01	0.02	0.00	<u>2.10</u>	0.01
Waihou River at Okauia	12	0.02	0.01	0.01	0.05	0.02	0.96	0.01
Waihou River at Whites Rd	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01
Waiohotu Stm at Waiohotu Rd (Off SH5)	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01
Waiomou Stm at Matamata-Tauranga Rd	12	0.02	0.01	0.01	0.07	0.03	1.23	0.01
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	0.03	0.03	0.01	0.09	0.03	1.06	0.03
Waitoa River at Landsdowne Rd Br	12	0.04	0.03	0.01	0.10	0.06	0.54	0.02
Waitoa River at Mellon Rd Recorder	12	0.09	0.08	0.01	0.25	0.15	0.51	0.03
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	0.12	0.05	0.01	0.72	0.08	<u>2.67</u>	0.05
Awaroa Stm (Rotowaro) at Sansons Br, Rotowaro-Huntly Rd	12	0.04	0.03	0.01	0.09	0.02	0.99	0.03
Karapiro Stm at Hickey Rd Bridge	12	0.03	0.02	0.01	0.10	0.02	1.65	0.02
Kirikiriira Stm at Tauhara Dr	12	0.27	0.24	0.17	0.51	0.10	1.44	0.24
Komakorau Stm at Henry Rd	12	0.66	0.67	0.21	1.10	0.28	0.17	0.68
Little Waipa Stm at Arapuni - Putaruru Rd	12	0.02	0.01	0.01	0.10	0.02	<u>2.23</u>	0.01
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	12	0.21	0.20	0.14	0.37	0.06	1.53	0.22
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	0.11	0.09	0.01	0.37	0.14	1.10	0.08
Mangaone Stm at Annebrooke Rd Br	12	0.02	0.02	0.01	0.05	0.01	1.05	0.02
Mangaonua Stm at Harbutt Rd Br	12	0.01	0.01	0.01	0.02	0.00	<u>2.22</u>	0.01
Mangaonua Stm at Hoeka Rd	12	0.09	0.09	0.04	0.13	0.02	-0.63	0.09
Mangatangi River at SH2 Maramarua	12	0.02	0.01	0.01	0.10	0.01	<u>2.49</u>	0.01
Mangatawhiri River at Lyons Rd At Buckingham Br	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01
Mangawara Stm at Rutherford Rd Br	12	0.30	0.29	0.19	0.44	0.15	0.37	0.31
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	0.12	0.10	0.03	0.23	0.10	0.42	0.10
Matahuru Stm at Waiterimu Road Below Confluence	12	0.04	0.03	0.01	0.11	0.03	1.39	0.04
Ohaeroa Stm at SH22 Br	12	0.01	0.01	0.01	0.05	0.00	<u>2.86</u>	0.01
Opuatia Stm at Ponganui Rd	12	0.01	0.01	0.01	0.02	0.00	1.33	0.01
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	0.01	0.01	0.01	0.03	0.01	1.44	0.01
Waerenga Stm at Taniwha Rd	12	0.01	0.01	0.01	0.05	0.01	<u>2.48</u>	0.01
Waitawhiriwhiri Stm at Edgumbe Street	12	0.51	0.49	0.20	0.79	0.21	-0.07	0.60
Whakapipi Stm at SH22 Br	12	0.03	0.01	0.01	0.14	0.04	1.53	0.01
Whakauru Stm at U/S SH1 Br	12	0.03	0.01	0.01	0.25	0.00	<u>3.01</u>	0.01
Whangamarino River at Island Block Rd	12	0.09	0.03	0.01	0.42	0.13	<u>1.71</u>	0.03
Whangamarino River at Jefferies Rd Br	12	0.04	0.03	0.01	0.13	0.06	0.87	0.03
Whangape Stm at Rangiriiri-Glen Murray Rd	12	0.01	0.01	0.01	0.03	0.01	0.71	0.01

Nitrate/Nitrite (g m⁻³)

Location								07-11
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River at Old Maratoto Rd	12	0.064	0.031	0.001	0.270	0.086	1.54	0.022
Kauaeranga River at Smiths Cableway/Recorder	12	0.033	0.027	0.001	0.076	0.047	0.31	0.017
Ohinemuri River at Queens Head	12	0.994	0.965	0.430	1.650	0.340	0.10	1.025
Ohinemuri River at SH25 Br	12	0.520	0.475	0.088	0.910	0.380	0.07	0.425
Tairua River at Morrisons Br Hikuai	12	0.034	0.015	0.001	0.103	0.061	0.78	0.015
Tapu River at Tapu-Coroglen Rd	12	0.006	0.001	0.001	0.034	0.008	<u>2.26</u>	0.003
Waiau River at E309 Rd Ford	12	0.050	0.041	0.004	0.142	0.057	0.93	0.028
Waitekauri River at U/S Ohinemuri Conflu	12	0.144	0.107	0.001	0.370	0.169	0.68	0.119
Waiwawa River at SH25 Coroglen	12	0.016	0.010	0.001	0.035	0.026	0.30	0.009
Wharekawa River at SH25	12	0.081	0.057	0.003	0.210	0.096	0.61	0.046
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	0.421	0.375	0.220	0.740	0.200	0.71	0.320
Oraka Stm at Lake Rd	12	2.093	2.150	1.350	2.600	0.505	-0.54	2.065
Piako River at Kiwitahi	12	1.217	0.990	0.113	2.800	1.320	0.46	0.830
Piako River at Paeroa-Tahuna Rd Br	12	1.583	1.420	0.480	2.900	0.975	0.49	1.545
Piakonui Stm at Piakonui Rd	12	0.283	0.225	0.110	0.610	0.162	1.05	0.220
Waihou River at Okauia	12	1.208	1.190	0.840	1.670	0.340	0.43	1.100
Waihou River at Whites Rd	12	0.728	0.720	0.680	0.790	0.030	0.59	0.690
Waiohotu Stm at Waiohotu Rd (Off SH5)	12	0.172	0.160	0.112	0.250	0.078	0.40	0.200
Waiomou Stm at Matamata-Tauranga Rd	12	0.594	0.540	0.350	1.070	0.235	0.99	0.465
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	0.358	0.350	0.003	0.930	0.419	0.56	0.229
Waitoa River at Landsdowne Rd Br	12	1.515	1.430	0.850	2.500	0.845	0.45	1.445
Waitoa River at Mellon Rd Recorder	12	2.234	2.350	1.450	3.300	0.705	0.27	2.100
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	1.702	1.715	0.800	3.200	0.705	0.73	1.435
Awaroa Stm (Rotowaro) at Sansons Br, Rotowaro-Huntly Rd	12	0.831	0.815	0.240	1.850	0.685	0.75	0.605
Karapiro Stm at Hickey Rd Bridge	12	0.692	0.520	0.173	1.710	0.620	1.01	0.545
Kirikiriira Stm at Tauhara Dr	12	0.973	0.825	0.610	1.970	0.435	1.37	0.870
Komakorau Stm at Henry Rd	12	1.828	1.300	0.970	6.000	0.160	<u>2.29</u>	1.395
Little Waipa Stm at Arapuni - Putaruru Rd	12	1.703	1.600	1.090	2.400	0.495	0.35	1.500
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	12	0.905	0.750	0.630	1.640	0.365	1.27	0.974
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	2.802	3.000	1.350	4.200	0.750	-0.37	3.000
Mangaone Stm at Annebrooke Rd Br	12	2.689	2.700	1.770	3.200	0.200	-1.01	2.600
Mangaonua Stm at Harbutt Rd Br	12	0.614	0.545	0.230	1.190	0.440	0.72	0.550
Mangaonua Stm at Hoeka Rd	12	1.476	1.425	0.840	1.920	0.290	-0.31	1.500
Mangatangi River at SH2 Maramarua	12	0.330	0.206	0.008	0.890	0.538	0.44	0.165
Mangatawhiri River at Lyons Rd At Buckingham Br	12	0.077	0.038	0.002	0.198	0.151	0.36	0.015
Mangawara Stm at Rutherford Rd Br	12	1.009	0.810	0.560	2.200	0.400	1.49	0.834
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	2.263	2.250	1.860	2.800	0.490	0.19	2.000
Matahuru Stm at Waiterimu Road Below Confluence	12	0.736	0.735	0.059	1.670	0.770	0.35	0.715
Ohaeroa Stm at SH22 Br	12	1.551	1.550	1.030	2.300	0.350	0.69	1.500
Opuatia Stm at Ponganui Rd	12	0.782	0.770	0.460	1.240	0.270	0.64	0.790
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	1.780	1.785	1.000	2.400	0.475	-0.42	1.650
Waerenga Stm at Taniwha Rd	12	0.880	0.830	0.180	1.570	0.785	0.10	0.775
Waitawhiriwhiri Stm at Edgumbe Street	12	0.869	0.890	0.460	1.170	0.260	-0.37	0.898
Whakapipi Stm at SH22 Br	12	4.008	3.900	2.100	5.400	<u>1.800</u>	-0.22	3.745
Whakauru Stm at U/S SH1 Br	12	0.252	0.245	0.131	0.350	0.109	-0.10	0.150
Whangamarino River at Island Block Rd	12	0.096	0.041	0.001	0.300	0.170	1.02	0.050
Whangamarino River at Jefferies Rd Br	12	0.716	0.700	0.010	1.650	0.790	0.27	0.660
Whangape Stm at Rangiriiri-Glen Murray Rd	12	0.129	0.003	0.001	0.610	0.216	1.37	0.009

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

Waipa River and Tributaries																
Kaniwhaniwha Stm at Wright Rd	12	0.02	0.02	0.01	0.08	0.02	1.44	0.02	12	0.477	0.435	0.141	1.010	0.424	0.64	0.338
Mangaohoi Stm at South Branch Maru Rd	12	0.01	0.01	0.01	0.01	0.00	<u>1.83</u>	0.01	12	0.256	0.235	0.130	0.400	0.161	0.35	0.243
Mangaokewa Stm at Lawrence St Bridge	12	0.01	0.01	0.01	0.03	0.01	1.23	0.01	12	0.626	0.520	0.360	1.180	0.365	0.97	0.520
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	0.08	0.06	0.01	0.41	0.04	<u>2.78</u>	0.06	12	1.556	1.390	0.830	2.900	0.765	0.99	1.800
Mangapu River at Otorohanga	12	0.05	0.03	0.01	0.15	0.05	1.15	0.03	12	0.913	0.820	0.600	1.450	0.350	0.81	0.890
Mangatutu Stm (Waikeria) at Walker Rd Br	12	0.01	0.01	0.01	0.05	0.00	<u>2.58</u>	0.01	12	0.485	0.460	0.117	1.090	0.400	0.70	0.277
Mangauika Stm at Te Awamutu Borough W/S Intake	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01	12	0.195	0.181	0.077	0.290	0.129	-0.06	0.200
Ohote Stm at Whatawhata/Horotiu Rd	12	0.06	0.06	0.01	0.10	0.04	-0.24	0.06	12	0.623	0.535	0.091	1.350	0.480	0.50	0.535
Puniu River at Bartons Corner Rd Br	12	0.02	0.02	0.01	0.10	0.01	<u>2.54</u>	0.02	12	0.764	0.705	0.310	1.280	0.600	0.28	0.588
Waipa River at Mangaokewa Rd	12	0.01	0.01	0.01	0.02	0.01	1.35	0.01	12	0.405	0.385	0.143	0.790	0.225	0.71	0.390
Waipa River at Pirongia-Ngutunui Rd Br	12	0.02	0.02	0.01	0.05	0.03	0.22	0.02	12	0.718	0.635	0.270	1.640	0.485	0.99	0.600
Waipa River at SH3 Otorohanga	12	0.01	0.01	0.01	0.05	0.01	<u>1.75</u>	0.01	12	0.506	0.400	0.169	1.170	0.390	0.96	0.400
Waitomo Stm at SH31 Otorohanga	12	0.02	0.01	0.01	0.04	0.02	0.58	0.01	12	0.598	0.525	0.360	1.010	0.255	0.85	0.490
Waitomo Stm at Tumutumu Rd	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01	12	0.642	0.635	0.430	0.970	0.220	0.49	0.635
Tributaries to the upper Waikato River																
Kawaunui Stm at SH5 Br	12	0.05	0.01	0.01	0.50	0.01	<u>3.00</u>	0.02	12	2.655	2.700	1.960	3.300	0.450	-0.29	2.500
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	0.02	0.01	0.01	0.07	0.02	<u>2.17</u>	0.01	12	0.653	0.620	0.470	0.890	0.270	0.39	0.480
Mangakara Stm (Reporoa) at SH5	12	0.02	0.01	0.01	0.07	0.01	<u>2.38</u>	0.02	12	1.443	1.450	1.150	1.720	0.260	-0.05	1.300
Mangakino Stm (Whakamaru) at Sandel Rd	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01	12	0.665	0.630	0.440	0.980	0.145	0.69	0.610
Otamakokore Stm at Hossack Rd	12	0.02	0.01	0.01	0.08	0.00	<u>2.15</u>	0.01	12	0.932	0.845	0.640	1.390	0.395	0.68	0.735
Pueto Stm at Broadlands Rd Br	11	0.01	0.01	0.01	0.01	0.00	1.68	0.01	11	0.480	0.460	0.430	0.570	0.073	0.69	0.420
Tahunaatara Stm at Ohakuri Rd	12	0.01	0.01	0.01	0.05	0.01	<u>2.32</u>	0.01	12	0.613	0.570	0.470	0.880	0.265	0.69	0.520
Torepatutahi Stm at Vaile Rd Br	12	0.01	0.01	0.01	0.03	0.00	<u>3.02</u>	0.01	12	0.633	0.575	0.480	0.920	0.220	0.85	0.478
Waiotapu Stm at Campbell Rd Br	12	0.83	0.83	0.72	0.95	0.05	0.42	0.85	12	0.848	0.870	0.480	0.980	0.110	<u>-1.92</u>	0.875
Waiotapu Stm at Homestead Rd Br	12	0.33	0.32	0.15	0.50	0.11	-0.11	0.29	12	1.364	1.315	1.030	1.690	0.305	0.21	1.350
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01	12	1.236	1.250	1.000	1.540	0.225	0.04	1.160
Whirinaki Stm at Corbett Rd	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01	12	0.791	0.760	0.720	0.930	0.125	0.67	0.710
West Coast																
Awakino River at Gribbon Rd	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01	12	0.109	0.111	0.026	0.200	0.082	0.16	0.110
Awakino River at SH3 Awakau Rd Junction	12	0.01	0.01	0.01	0.02	0.00	<u>3.02</u>	0.01	12	0.234	0.222	0.010	0.460	0.216	-0.01	0.202
Manganui River at Off Manganui Rd	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01	12	0.137	0.128	0.001	0.280	0.089	0.06	0.121
Mangaotaki River at SH3 Br	12	0.01	0.01	0.01	0.02	0.00	1.45	0.01	12	0.683	0.660	0.380	1.120	0.460	0.38	0.685
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01	12	0.281	0.260	0.141	0.470	0.164	0.33	0.260
Mokau River at Awakau Rd	12	0.01	0.01	0.01	0.02	0.01	0.21	0.01	12	0.491	0.425	0.107	1.100	0.430	0.63	0.440
Mokau River at Mangaokewa Rd (Off SH30)	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01	12	0.331	0.255	0.165	0.700	0.220	1.08	0.265
Mokau River at Totoro Rd Recorder	12	0.01	0.01	0.01	0.02	0.00	<u>3.02</u>	0.01	12	0.608	0.520	0.250	1.210	0.460	0.68	0.536
Mokauiti Stm at Three Way Point - Aria	12	0.01	0.01	0.01	0.03	0.02	0.51	0.02	12	0.399	0.305	0.090	0.950	0.465	0.66	0.294
Ohautira Stm at Waingaro Te Uku Rd	12	0.01	0.01	0.01	0.02	0.00	<u>2.60</u>	0.01	12	0.279	0.260	0.037	0.620	0.223	0.60	0.253
Oparau River at Langdon Rd (Off Okupata Rd)	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01	12	0.154	0.121	0.001	0.430	0.161	0.86	0.065
Tawarau River at Off Speedies Rd	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01	12	0.305	0.255	0.144	0.520	0.190	0.44	0.283
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	0.01	0.01	0.01	0.03	0.00	1.61	0.01	12	0.448	0.395	0.014	1.160	0.471	0.70	0.365
Waitetuna River at Te Uku-Waingaro Rd	12	0.03	0.01	0.01	0.16	0.01	<u>2.02</u>	0.01	12	0.388	0.365	0.073	0.770	0.276	0.43	0.292
Inflows to Lake Taupo																
Hinemaiaia River at SH1	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01	12	0.082	0.084	0.033	0.132	0.049	0.11	0.064
Kuratau River at SH41 Moerangi	12	0.01	0.01	0.01	0.01	0.00	<u>1.82</u>	0.01	12	0.100	0.099	0.048	0.160	0.046	0.05	0.073
Kuratau River at 43 Te Rae Street	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01	12	0.670	0.635	0.320	1.150	0.325	0.57	0.620
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	0.01	0.01	0.01	0.01	0.00	<u>1.79</u>	0.01	12	0.770	0.760	0.650	0.900	0.100	0.26	0.730
Tauranga-Taupo River at Te Kono Slackline	11	0.01	0.01	0.01	0.01	0.00	1.00	0.01	11	0.086	0.086	0.054	0.143	0.036	0.73	0.078
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01	12	0.008	0.001	0.001	0.062	0.001	<u>2.41</u>	0.002
Tokaanu Stm at Off SH41 Turangi	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01	12	0.473	0.480	0.450	0.500	0.035	-0.20	0.425
Waihaha River at SH32	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01	12	0.123	0.113	0.082	0.198	0.035	1.03	0.108
Waitahanui River at Blake Rd	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01	12	0.450	0.450	0.390	0.490	0.040	-0.49	0.442
Whangamata Stm (Kinloch) at Whangamata Rd	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01	12	1.632	1.645	1.470	1.740	0.120	-0.41	1.500
Whanganui Stm at Lakeside Lake Taupo	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01	12	0.343	0.320	0.250	0.530	0.105	0.98	0.310
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	0.01	0.01	0.01	0.01	0.00	1.00	0.01	12	0.778	0.755	0.570	1.040	0.185	0.40	0.715

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

Total Kjeldahl Nitrogen (g m⁻³)

Location	Count	Mean	Median	Min	Max	IQR	Skew	Median	07-11
Coromandel									
Hikutaia River at Old Maratoto Rd	12	0.11	0.09	0.03	0.25	0.08	1.04	0.09	
Kauaeranga River at Smiths Cableway/Recorder	12	0.12	0.11	0.07	0.23	0.06	0.93	0.08	
Ohinemuri River at Queens Head	12	0.52	0.52	0.15	1.19	0.49	0.59	0.28	
Ohinemuri River at SH25 Br	12	0.21	0.17	0.10	0.61	0.10	<u>2.06</u>	0.15	
Tairua River at Morrisons Br Hikuai	12	0.08	0.08	0.03	0.17	0.05	0.76	0.07	
Tapu River at Tapu-Coroglen Rd	12	0.09	0.08	0.03	0.19	0.12	0.31	0.07	
Waiiau River at E309 Rd Ford	12	0.10	0.09	0.03	0.28	0.10	0.98	0.08	
Waitekauri River at U/S Ohinemuri Conflu	12	0.25	0.13	0.07	1.50	0.06	<u>2.96</u>	0.12	
Waiwawa River at SH25 Coroglen	12	0.11	0.08	0.03	0.40	0.11	<u>1.75</u>	0.08	
Wharekawa River at SH25	12	0.08	0.08	0.03	0.18	0.05	0.86	0.09	
Hauraki									
Mangawhero Stm (Kaihere) at Mangawara Rd	12	0.17	0.17	0.08	0.28	0.10	0.13	0.13	
Oraka Stm at Lake Rd	12	0.45	0.34	0.20	0.92	0.34	0.74	0.31	
Piako River at Kiwitahi	12	0.71	0.54	0.33	1.99	0.50	1.57	0.42	
Piako River at Paeroa-Tahuna Rd Br	12	0.93	0.72	0.51	1.62	0.72	0.64	0.70	
Piakonui Stm at Piakonui Rd	12	0.29	0.24	0.12	0.74	0.17	1.42	0.18	
Waihou River at Okauia	12	0.31	0.25	0.16	0.62	0.18	1.10	0.24	
Waihou River at Whites Rd	12	0.07	0.07	0.03	0.14	0.08	0.32	0.03	
Waihotu Stm at Waihotu Rd (Off SH5)	12	0.21	0.16	0.11	0.58	0.09	<u>1.73</u>	0.15	
Waiomou Stm at Matamata-Tauranga Rd	12	0.30	0.20	0.14	1.34	0.06	<u>2.78</u>	0.20	
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	0.51	0.40	0.28	1.11	0.17	1.52	0.41	
Waitoa River at Landsdowne Rd Br	12	0.65	0.57	0.29	1.50	0.20	1.65	0.49	
Waitoa River at Mellon Rd Recorder	12	0.75	0.70	0.39	1.32	0.56	0.53	0.49	
Tributaries to the lower Waikato River									
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	0.80	0.68	0.43	2.00	0.30	<u>1.92</u>	0.58	
Awaroa Stm (Rotowaro) at Sansons Br, Rotowaro-Huntly Rd	12	0.36	0.35	0.23	0.48	0.10	0.08	0.34	
Karapiro Stm at Hickey Rd Bridge	12	0.51	0.39	0.21	1.79	0.17	<u>2.45</u>	0.33	
Kirikiriroa Stm at Tauhara Dr	12	0.77	0.75	0.27	1.13	0.18	-0.41	0.71	
Komakorau Stm at Henry Rd	12	1.73	1.52	1.20	2.70	0.61	0.92	1.80	
Little Waipa Stm at Arapuni - Putaruru Rd	12	0.35	0.20	0.12	1.08	0.37	1.36	0.19	
Mangakotukutuku Stm (Rukuhia) at Peacocks Rd	12	1.44	1.32	0.93	2.10	0.79	0.35	1.20	
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	0.59	0.56	0.34	0.97	0.25	0.71	0.54	
Mangaone Stm at Annebrooke Rd Br	12	0.51	0.47	0.32	1.07	0.19	<u>1.82</u>	0.50	
Mangaonua Stm at Harbutt Rd Br	12	0.32	0.27	0.20	0.70	0.10	<u>2.02</u>	0.26	
Mangaonua Stm at Hoeka Rd	12	0.60	0.57	0.34	1.15	0.26	1.15	0.46	
Mangatangi River at SH2 Maramarua	12	0.50	0.37	0.28	1.46	0.28	<u>2.19</u>	0.36	
Mangatawhiri River at Lyons Rd At Buckingham Br	12	0.19	0.15	0.10	0.39	0.15	1.03	0.14	
Mangawara Stm at Rutherford Rd Br	12	1.31	1.22	0.81	2.20	0.72	0.59	1.16	
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	1.11	0.85	0.62	2.90	0.23	<u>2.19</u>	0.84	
Matahuru Stm at Waiterimu Road Below Confluence	12	0.80	0.63	0.39	1.99	0.28	1.65	0.63	
Ohaeroa Stm at SH22 Br	12	0.39	0.31	0.19	0.84	0.20	1.28	0.31	
Opuatia Stm at Ponganui Rd	12	0.43	0.38	0.22	0.99	0.22	1.40	0.32	
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	0.33	0.22	0.12	0.78	0.28	1.08	0.23	
Waerenga Stm at Taniwha Rd	12	0.42	0.27	0.20	1.58	0.17	<u>2.39</u>	0.27	
Waitawhirwhiri Stm at Edgcombe Street	12	1.38	1.29	1.19	2.00	0.32	1.49	1.30	
Whakapipi Stm at SH22 Br	12	0.58	0.44	0.28	1.36	0.27	1.44	0.43	
Whakauru Stm at U/S SH1 Br	12	0.59	0.18	0.13	4.90	0.14	<u>3.00</u>	0.18	
Whangamarino River at Island Block Rd	12	1.70	1.58	0.84	3.80	0.49	<u>2.02</u>	1.69	
Whangamarino River at Jefferies Rd Br	12	0.75	0.54	0.31	2.00	0.23	1.66	0.48	
Whangape Stm at Rangiriri-Glen Murray Rd	12	2.29	2.25	0.74	5.90	1.20	1.60	1.95	

Total Nitrogen (g m⁻³)

Location	Count	Mean	Median	Min	Max	IQR	Skew	Median	07-11
	12	0.17	0.13	0.03	0.43	0.10	1.24	0.12	
	12	0.16	0.16	0.08	0.27	0.10	0.34	0.10	
	12	1.51	1.76	0.59	2.18	0.75	-0.46	1.38	
	12	0.73	0.66	0.28	1.17	0.53	0.20	0.62	
	12	0.12	0.09	0.04	0.24	0.10	0.73	0.11	
	12	0.09	0.08	0.03	0.22	0.11	0.60	0.07	
	12	0.15	0.15	0.04	0.36	0.09	0.93	0.13	
	12	0.39	0.26	0.07	1.87	0.17	<u>2.77</u>	0.26	
	12	0.13	0.08	0.03	0.44	0.12	<u>1.69</u>	0.09	
	12	0.16	0.14	0.06	0.34	0.13	0.85	0.14	
	12	0.59	0.56	0.38	1.01	0.24	0.98	0.45	
	12	2.54	2.56	2.07	3.15	0.66	0.21	2.33	
	12	1.93	1.68	0.45	3.93	1.97	0.35	1.40	
	12	2.52	2.40	1.02	4.16	1.18	0.24	2.14	
	12	0.58	0.55	0.34	0.96	0.38	0.47	0.45	
	12	1.52	1.46	1.24	1.95	0.27	0.60	1.38	
	12	0.80	0.79	0.71	0.86	0.09	-0.05	0.73	
	12	0.39	0.33	0.23	0.74	0.12	1.42	0.34	
	12	0.90	0.73	0.49	1.96	0.46	1.44	0.70	
	12	0.87	0.78	0.28	2.04	0.57	1.11	0.70	
	12	2.16	1.99	1.32	3.10	1.42	0.25	1.92	
	12	2.98	2.92	1.89	4.26	1.15	0.36	2.61	
	12	2.50	2.40	1.31	5.20	0.84	<u>1.73</u>	2.19	
	12	1.19	1.19	0.51	2.19	0.77	0.48	0.98	
	12	1.20	0.88	0.40	2.49	0.96	0.81	0.89	
	12	1.74	1.67	0.89	2.66	0.48	0.53	1.63	
	12	3.55	2.83	2.42	8.70	0.63	<u>2.25</u>	3.15	
	12	2.06	1.83	1.63	3.03	0.63	1.12	1.72	
	12	2.35	2.09	1.56	3.74	0.76	0.92	1.99	
	12	3.39	3.43	2.32	4.88	0.71	0.46	3.58	
	12	3.20	3.12	2.84	3.68	0.28	0.62	3.11	
	12	0.93	0.88	0.49	1.59	0.60	0.48	0.82	
	12	2.07	1.98	1.70	2.50	0.53	0.45	2.03	
	12	0.83	0.73	0.31	2.09	0.78	0.94	0.56	
	12	0.26	0.28	0.11	0.45	0.23	0.22	0.20	
	12	2.32	2.18	1.40	4.04	1.14	0.77	2.09	
	12	3.37	3.14	2.64	5.10	0.53	1.43	2.91	
	12	1.54	1.41	0.61	3.22	1.36	0.66	1.40	
	12	1.94	1.88	1.54	2.60	0.45	0.75	1.78	
	12	1.21	1.12	0.92	1.81	0.42	0.77	1.10	
	12	2.11	2.05	1.73	2.87	0.39	0.97	1.95	
	12	1.30	1.15	0.48	2.38	0.84	0.54	1.06	
	12	2.25	2.22	1.65	2.77	0.38	0.01	2.22	
	12	4.59	4.33	3.46	5.74	1.43	0.21	4.18	
	12	0.84	0.50	0.29	5.12	0.21	<u>2.98</u>	0.33	
	12	1.80	1.63	0.85	3.81	0.50	<u>1.68</u>	1.89	
	12	1.46	1.38	0.42	2.83	1.39	0.36	1.05	
	12	2.42	2.34	1.06	5.91	0.96	<u>1.94</u>	2.04	

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

Waipa River and Tributaries																
Kaniwhaniwha Stm at Wright Rd	12	0.29	0.25	0.16	0.46	0.21	0.49	0.23	12	0.77	0.71	0.38	1.36	0.41	0.51	0.63
Mangaohoi Stm at South Branch Maru Rd	12	0.18	0.18	0.12	0.26	0.06	0.32	0.14	12	0.44	0.41	0.30	0.65	0.25	0.48	0.40
Mangaokewa Stm at Lawrence St Bridge	12	0.27	0.24	0.14	0.69	0.14	<u>1.93</u>	0.26	12	0.90	0.76	0.50	1.41	0.41	0.47	0.77
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	0.97	0.72	0.52	4.10	0.23	<u>2.93</u>	0.69	12	2.53	2.04	1.38	5.64	1.01	<u>1.73</u>	2.51
Mangapu River at Otorohanga	12	0.42	0.36	0.23	0.71	0.23	0.60	0.35	12	1.33	1.33	0.96	1.81	0.44	0.39	1.27
Mangatutu Stm (Waikeria) at Walker Rd Br	12	0.37	0.21	0.10	2.30	0.07	<u>2.98</u>	0.19	12	0.86	0.62	0.22	2.85	0.62	<u>2.04</u>	0.55
Mangauika Stm at Te Awamutu Borough W/S Intake	12	0.13	0.10	0.05	0.29	0.07	1.25	0.07	12	0.32	0.31	0.17	0.46	0.12	-0.08	0.27
Ohote Stm at Whatawhata/Horotiu Rd	12	0.88	0.86	0.71	1.04	0.18	0.05	0.82	12	1.50	1.48	0.87	2.31	0.68	0.36	1.37
Puniu River at Bartons Corner Rd Br	12	0.61	0.31	0.18	4.10	0.08	<u>3.00</u>	0.30	12	1.37	1.04	0.55	5.18	0.67	<u>2.62</u>	0.95
Waipa River at Mangaokewa Rd	12	0.21	0.19	0.15	0.43	0.04	<u>2.02</u>	0.22	12	0.62	0.58	0.46	0.94	0.16	1.10	0.60
Waipa River at Pirongia-Ngutunui Rd Br	12	0.32	0.32	0.24	0.44	0.13	0.30	0.28	12	1.04	0.99	0.57	2.02	0.52	0.92	0.92
Waipa River at SH3 Otorohanga	12	0.24	0.23	0.12	0.56	0.09	<u>1.77</u>	0.23	12	0.75	0.64	0.29	1.42	0.47	0.59	0.64
Waitomo Stm at SH31 Otorohanga	12	0.32	0.31	0.15	0.70	0.17	1.18	0.23	12	0.92	0.89	0.59	1.33	0.42	0.30	0.80
Waitomo Stm at Tumutumu Rd	12	0.18	0.15	0.08	0.41	0.10	1.29	0.13	12	0.82	0.84	0.57	1.14	0.21	0.36	0.78
Tributaries to the upper Waikato River																
Kawaunui Stm at SH5 Br	12	0.77	0.34	0.21	5.20	0.18	<u>2.96</u>	0.38	12	3.43	3.15	2.73	7.16	0.32	<u>2.76</u>	2.91
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	0.28	0.18	0.07	1.29	0.11	<u>2.69</u>	0.17	12	0.93	0.81	0.64	2.12	0.36	<u>2.18</u>	0.65
Mangakara Stm (Reporoa) at SH5	12	0.40	0.27	0.19	1.55	0.14	<u>2.68</u>	0.27	12	1.84	1.72	1.52	2.75	0.22	<u>1.88</u>	1.58
Mangakino Stm (Whakamaru) at Sandel Rd	12	0.12	0.09	0.03	0.28	0.09	0.99	0.10	12	0.79	0.76	0.47	1.06	0.16	-0.18	0.73
Otamakokore Stm at Hossack Rd	12	0.40	0.27	0.17	1.59	0.14	<u>2.27</u>	0.23	12	1.34	1.26	0.90	2.39	0.54	1.13	1.00
Pueto Stm at Broadlands Rd Br	11	0.12	0.10	0.06	0.25	0.07	1.07	0.09	11	0.55	0.58	0.00	0.73	0.11	<u>-2.32</u>	0.51
Tahunaatara Stm at Ohakuri Rd	12	0.41	0.21	0.12	2.30	0.15	<u>2.79</u>	0.19	12	1.03	0.86	0.65	2.90	0.39	<u>2.57</u>	0.74
Torepatutahi Stm at Vaile Rd Br	12	0.18	0.16	0.10	0.49	0.07	<u>2.19</u>	0.12	12	0.82	0.79	0.62	1.15	0.26	0.61	0.60
Waiotapu Stm at Campbell Rd Br	12	1.07	1.03	0.78	1.71	0.17	<u>1.84</u>	1.04	12	1.92	1.90	1.52	2.49	0.18	0.93	1.94
Waiotapu Stm at Homestead Rd Br	12	0.82	0.64	0.38	2.40	0.37	<u>2.20</u>	0.61	12	2.18	2.04	1.68	4.06	0.43	<u>2.18</u>	1.93
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	0.24	0.19	0.09	0.60	0.09	1.56	0.17	12	1.47	1.44	1.15	2.00	0.39	0.72	1.31
Whirinaki Stm at Corbett Rd	12	0.08	0.05	0.03	0.39	0.07	<u>2.44</u>	0.07	12	0.87	0.82	0.75	1.32	0.15	<u>1.89</u>	0.76
West Coast																
Awakino River at Gribbon Rd	12	0.10	0.05	0.03	0.62	0.06	<u>2.71</u>	0.07	12	0.21	0.17	0.05	0.70	0.12	<u>2.23</u>	0.16
Awakino River at SH3 Awakau Rd Junction	12	0.16	0.10	0.06	0.60	0.08	<u>2.26</u>	0.13	12	0.39	0.38	0.08	0.79	0.24	0.33	0.36
Manganui River at Off Manganui Rd	12	0.11	0.09	0.03	0.34	0.07	<u>1.82</u>	0.10	12	0.24	0.22	0.03	0.45	0.15	0.03	0.21
Mangaotaki River at SH3 Br	12	0.24	0.21	0.13	0.59	0.11	<u>1.93</u>	0.19	12	0.92	0.95	0.59	1.31	0.36	0.19	0.89
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	0.19	0.14	0.08	0.68	0.10	<u>2.47</u>	0.13	12	0.47	0.47	0.30	0.86	0.20	1.12	0.46
Mokau River at Awakau Rd	12	0.31	0.27	0.19	0.64	0.19	1.26	0.28	12	0.80	0.78	0.44	1.35	0.45	0.43	0.74
Mokau River at Mangaokewa Rd (Off SH30)	12	0.24	0.18	0.14	0.70	0.06	<u>2.14</u>	0.20	12	0.57	0.54	0.38	0.88	0.25	0.65	0.51
Mokau River at Totoro Rd Recorder	12	0.29	0.24	0.16	0.59	0.11	1.36	0.24	12	0.90	0.89	0.47	1.42	0.56	0.30	0.81
Mokauiti Stm at Three Way Point - Aria	12	0.35	0.29	0.20	0.65	0.15	1.19	0.34	12	0.75	0.72	0.35	1.24	0.52	0.16	0.64
Ohautira Stm at Waingaro Te Uku Rd	12	0.27	0.20	0.14	0.82	0.15	<u>2.01</u>	0.16	12	0.55	0.51	0.19	1.07	0.25	0.77	0.45
Oparau River at Langdon Rd (Off Okupata Rd)	12	0.15	0.11	0.06	0.42	0.09	1.49	0.12	12	0.31	0.27	0.10	0.61	0.28	0.47	0.22
Tawarau River at Off Speedies Rd	12	0.20	0.15	0.09	0.58	0.15	<u>1.87</u>	0.15	12	0.50	0.53	0.27	0.78	0.24	0.02	0.49
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	0.35	0.32	0.22	0.73	0.11	<u>1.69</u>	0.29	12	0.80	0.73	0.23	1.71	0.60	0.70	0.69
Waitetuna River at Te Uku-Waingaro Rd	12	0.43	0.25	0.10	2.30	0.19	<u>2.78</u>	0.21	12	0.82	0.70	0.17	2.56	0.40	<u>2.06</u>	0.50
Inflows to Lake Taupo																
Hinemaiaia River at SH1	12	0.09	0.08	0.03	0.29	0.05	<u>1.96</u>	0.08	12	0.17	0.16	0.09	0.38	0.06	<u>1.94</u>	0.13
Kuratau River at SH41 Moerangi	12	0.09	0.10	0.03	0.14	0.05	-0.28	0.08	12	0.19	0.19	0.15	0.23	0.04	0.11	0.16
Kuratau River at 43 Te Rae Street	12	0.15	0.16	0.07	0.25	0.06	0.23	0.15	12	0.82	0.80	0.57	1.26	0.25	0.88	0.77
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	0.25	0.25	0.14	0.36	0.13	0.07	0.22	12	1.02	1.01	0.93	1.18	0.13	0.57	0.96
Tauranga-Taupo River at Te Kono Slackline	11	0.05	0.06	0.03	0.08	0.05	-0.05	0.05	11	0.13	0.14	0.00	0.18	0.04	-1.62	0.13
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	12	0.14	0.11	0.05	0.49	0.05	<u>2.68</u>	0.11	12	0.14	0.12	0.05	0.52	0.05	<u>2.68</u>	0.11
Tokaanu Stm at Off SH41 Turangi	12	0.06	0.03	0.03	0.37	0.03	<u>2.88</u>	0.03	12	0.54	0.52	0.48	0.82	0.05	<u>2.62</u>	0.47
Waihaha River at SH32	12	0.06	0.07	0.03	0.11	0.04	0.03	0.06	12	0.18	0.19	0.11	0.22	0.05	-0.80	0.17
Waitahanui River at Blake Rd	12	0.08	0.08	0.03	0.26	0.08	1.60	0.06	12	0.53	0.52	0.44	0.65	0.10	0.36	0.51
Whangamata Stm (Kinloch) at Whangamata Rd	12	0.18	0.19	0.11	0.25	0.09	-0.09	0.16	12	1.82	1.83	1.68	1.98	0.13	0.06	1.67
Whanganui Stm at Lakeside Lake Taupo	12	0.11	0.09	0.03	0.24	0.09	0.67	0.10	12	0.46	0.45	0.35	0.62	0.10	0.72	0.43
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	0.22	0.18	0.13	0.71	0.09	<u>2.68</u>	0.16	12	1.00	0.99	0.75	1.43	0.25	0.84	0.91

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

Turbidity (NTU)

Location	07-11							07-11 Median
	Count	Mean	Median	Min	Max	IQR	Skew	
Coromandel								
Hikutaia River at Old Maratoto Rd	12	2.3	1.2	0.6	8.6	1.9	<u>1.98</u>	1.5
Kauaeranga River at Smiths Cableway/Recorder	12	3.3	1.5	0.5	14.1	3.5	<u>1.81</u>	1.1
Ohinemuri River at Queens Head	12	7.6	1.3	0.7	50.0	3.5	<u>2.29</u>	1.0
Ohinemuri River at SH25 Br	12	2.8	0.9	0.7	11.0	3.5	1.45	1.1
Tairua River at Morrisons Br Hikuai	12	3.4	1.1	0.7	24.0	1.3	<u>2.88</u>	1.2
Tapu River at Tapu-Coroglen Rd	12	3.6	1.3	0.6	18.4	2.5	<u>2.10</u>	0.9
Waiau River at E309 Rd Ford	12	6.4	2.6	2.0	22.0	6.8	1.36	2.8
Waitekauri River at U/S Ohinemuri Conflu	12	6.8	0.9	0.6	69.0	1.2	<u>3.01</u>	0.9
Waiwawa River at SH25 Coroglen	12	5.7	1.5	0.8	33.0	4.2	<u>2.30</u>	1.4
Wharekawa River at SH25	12	4.0	2.2	1.3	16.3	1.3	<u>1.95</u>	3.2
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	17.7	10.5	5.5	56.0	16.1	1.43	7.3
Oraka Stm at Lake Rd	12	10.6	6.3	4.0	50.0	3.6	<u>2.68</u>	5.6
Piako River at Kiwitahi	12	15.6	5.6	1.8	63.0	13.2	1.57	5.2
Piako River at Paeroa-Tahuna Rd Br	12	22.2	10.3	3.5	91.0	19.9	<u>1.75</u>	10.5
Piakonui Stm at Piakonui Rd	12	7.1	5.4	2.9	22.0	4.1	<u>1.93</u>	3.6
Waihou River at Okauia	12	9.3	6.3	1.6	42.0	4.0	<u>2.57</u>	4.8
Waihou River at Whites Rd	12	0.8	0.6	0.4	1.8	0.3	1.57	0.5
Waiohotu Stm at Waiohotu Rd (Off SH5)	12	13.4	6.4	4.2	52.0	3.9	<u>1.77</u>	4.3
Waiomou Stm at Matamata-Tauranga Rd	12	9.5	4.8	2.2	59.0	1.3	<u>2.91</u>	4.3
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	28.4	13.3	2.3	112.0	22.9	1.59	10.1
Waitoa River at Landsdowne Rd Br	12	13.7	5.4	2.1	46.0	11.1	1.43	5.5
Waitoa River at Mellon Rd Recorder	12	15.7	13.2	3.9	32.0	17.4	0.50	8.1
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	19.8	18.5	7.1	31.0	11.3	0.07	16.0
Awaroa Stm (Rotowaro) at Sansons Br, Rotowaro-Huntly Rd	12	24.8	10.9	5.4	80.0	27.7	1.27	7.0
Karapiro Stm at Hickey Rd Bridge	12	18.3	6.0	2.5	96.0	12.8	<u>2.15</u>	7.1
Kirikiri-roa Stm at Tauhara Dr	12	32.1	31.5	17.8	56.0	16.0	0.62	28.0
Komakorau Stm at Henry Rd	12	71.1	76.5	24.0	121.0	29.0	-0.32	77.3
Little Waipa Stm at Arapuni - Putaruru Rd	12	4.4	2.2	0.7	22.0	3.5	<u>2.48</u>	1.5
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	12	29.1	22.0	13.0	92.0	11.5	<u>2.46</u>	22.0
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	5.0	4.0	2.6	12.1	2.3	<u>1.72</u>	4.0
Mangaone Stm at Annebrooke Rd Br	12	11.0	10.2	6.8	26.0	3.2	<u>2.41</u>	11.0
Mangaonua Stm at Harbutt Rd Br	12	8.0	5.0	2.6	25.0	6.6	1.45	5.0
Mangaonua Stm at Hoeka Rd	12	26.4	14.8	7.7	98.0	15.9	<u>1.79</u>	16.9
Mangatangi River at SH2 Maramarua	12	34.4	18.8	11.6	171.0	16.5	<u>2.66</u>	12.4
Mangatawhiri River at Lyons Rd At Buckingham Br	12	11.6	5.6	1.2	55.0	7.5	<u>1.93</u>	3.6
Mangawara Stm at Rutherford Rd Br	12	72.7	58.0	17.8	240.0	22.5	<u>2.05</u>	43.2
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	58.4	52.0	29.0	160.0	9.5	<u>2.63</u>	50.0
Matahuru Stm at Waiterimu Road Below Confluence	12	72.9	36.0	22.0	360.0	13.5	<u>2.36</u>	36.1
Ohaeroa Stm at SH22 Br	12	31.9	10.4	2.8	210.0	14.1	<u>2.57</u>	8.7
Opuatia Stm at Ponganui Rd	12	49.8	20.0	9.5	195.0	28.6	1.66	13.0
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	5.9	3.5	1.4	32.0	2.7	<u>2.59</u>	2.7
Waerenga Stm at Taniwha Rd	12	37.7	8.9	2.6	270.0	5.2	<u>2.45</u>	7.8
Waitawhiriwhiri Stm at Edgecumbe Street	12	28.3	28.5	16.8	42.0	14.9	0.03	31.0
Whakapipi Stm at SH22 Br	12	22.2	7.5	3.7	115.0	9.7	<u>2.05</u>	5.8
Whakauru Stm at U/S SH1 Br	12	7.1	6.4	4.8	15.9	1.9	<u>2.42</u>	5.6
Whangamarino River at Island Block Rd	12	65.6	43.5	6.3	280.0	38.0	<u>2.40</u>	35.0
Whangamarino River at Jefferies Rd Br	12	66.2	27.0	16.7	300.0	18.3	<u>1.84</u>	19.9
Whangape Stm at Rangiriri-Glen Murray Rd	12	94.3	101.5	33.0	186.0	73.0	0.30	59.5

pH (pH units)

Location	07-11							07-11 Median
	Count	Mean	Median	Min	Max	IQR	Skew	
Coromandel								
Hikutaia River at Old Maratoto Rd	12	7.3	7.2	6.8	7.9	0.5	0.59	7.2
Kauaeranga River at Smiths Cableway/Recorder	12	7.1	7.1	6.7	7.5	0.5	-0.03	7.2
Ohinemuri River at Queens Head	12	7.1	7.1	6.6	7.9	0.5	0.60	7.2
Ohinemuri River at SH25 Br	12	7.0	7.0	6.7	7.5	0.4	0.46	7.1
Tairua River at Morrisons Br Hikuai	12	7.0	7.0	6.7	7.3	0.1	0.43	7.1
Tapu River at Tapu-Coroglen Rd	12	7.4	7.4	7.0	7.9	0.5	0.03	7.5
Waiau River at E309 Rd Ford	12	7.3	7.3	7.0	7.6	0.3	0.28	7.4
Waitekauri River at U/S Ohinemuri Conflu	12	7.2	7.1	6.8	7.6	0.4	0.26	7.2
Waiwawa River at SH25 Coroglen	12	7.1	7.1	6.8	7.5	0.2	0.41	7.2
Wharekawa River at SH25	12	6.9	6.9	6.7	7.2	0.3	0.31	7.0
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	7.3	7.4	6.9	7.5	0.3	-0.70	7.4
Oraka Stm at Lake Rd	12	7.2	7.3	6.8	7.5	0.3	-0.77	7.2
Piako River at Kiwitahi	12	7.1	7.0	6.8	7.5	0.4	0.61	7.1
Piako River at Paeroa-Tahuna Rd Br	12	7.2	7.1	6.8	7.8	0.4	0.46	7.3
Piakonui Stm at Piakonui Rd	12	7.3	7.3	7.0	7.8	0.4	0.26	7.3
Waihou River at Okauia	12	7.2	7.2	6.7	7.8	0.3	0.28	7.3
Waihou River at Whites Rd	12	7.0	7.0	6.7	7.4	0.1	0.74	6.9
Waiohotu Stm at Waiohotu Rd (Off SH5)	12	7.1	7.2	6.0	7.4	0.3	<u>-1.97</u>	7.2
Waiomou Stm at Matamata-Tauranga Rd	12	7.1	7.2	6.7	7.5	0.3	-0.25	7.2
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	7.1	7.1	6.7	7.6	0.4	0.38	7.2
Waitoa River at Landsdowne Rd Br	12	7.1	7.0	6.8	7.3	0.2	0.13	7.2
Waitoa River at Mellon Rd Recorder	12	7.1	7.0	6.7	7.6	0.4	0.45	7.2
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	7.0	7.0	6.7	7.5	0.5	0.51	7.2
Awaroa Stm (Rotowaro) at Sansons Br, Rotowaro-Huntly Rd	12	7.7	7.7	7.5	8.2	0.2	1.60	7.7
Karapiro Stm at Hickey Rd Bridge	12	7.3	7.2	6.9	7.5	0.4	-0.13	7.2
Kirikiri-roa Stm at Tauhara Dr	12	6.8	6.8	6.7	6.9	0.1	-0.15	6.8
Komakorau Stm at Henry Rd	12	6.5	6.6	5.9	7.0	0.4	-0.54	6.6
Little Waipa Stm at Arapuni - Putaruru Rd	12	7.1	7.1	6.6	7.4	0.1	-0.69	7.0
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	12	6.8	7.0	6.0	7.1	0.2	<u>-1.78</u>	7.0
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	7.5	7.5	7.0	7.9	0.4	-0.29	7.5
Mangaone Stm at Annebrooke Rd Br	12	7.2	7.3	6.6	7.4	0.2	<u>-1.78</u>	7.3
Mangaonua Stm at Harbutt Rd Br	12	7.3	7.3	7.0	7.7	0.4	0.21	7.3
Mangaonua Stm at Hoeka Rd	12	7.0	7.0	6.7	7.2	0.2	-0.65	7.0
Mangatangi River at SH2 Maramarua	12	7.0	7.0	6.8	7.4	0.4	0.53	7.1
Mangatawhiri River at Lyons Rd At Buckingham Br	12	7.2	7.2	6.9	7.7	0.4	0.50	7.4
Mangawara Stm at Rutherford Rd Br	12	6.7	6.7	6.3	7.0	0.3	-0.43	6.8
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	6.9	7.0	6.5	7.2	0.2	-1.11	7.0
Matahuru Stm at Waiterimu Road Below Confluence	12	7.0	7.0	6.6	7.4	0.3	0.35	7.1
Ohaeroa Stm at SH22 Br	12	7.4	7.3	7.2	7.8	0.4	0.81	7.5
Opuatia Stm at Ponganui Rd	12	7.5	7.6	7.1	8.0	0.3	0.37	7.6
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	7.2	7.3	6.7	7.6	0.2	-0.88	7.2
Waerenga Stm at Taniwha Rd	12	7.2	7.1	6.9	7.5	0.3	0.56	7.3
Waitawhiriwhiri Stm at Edgecumbe Street	12	6.9	6.9	6.7	7.1	0.2	0.00	6.9
Whakapipi Stm at SH22 Br	12	7.2	7.2	7.0	7.4	0.3	-0.08	7.3
Whakauru Stm at U/S SH1 Br	12	7.4	7.5	7.1	7.6	0.1	-1.11	7.5
Whangamarino River at Island Block Rd	12	6.8	6.9	6.3	7.2	0.4	-0.43	6.9
Whangamarino River at Jefferies Rd Br	12	7.0	6.9	6.7	7.4	0.2	1.21	7.1
Whangape Stm at Rangiriri-Glen Murray Rd	12	7.3	7.2	6.9	7.9	0.6	0.43	7.4

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

Waipa River and Tributaries																	
Kaniwhaniwha Stm at Wright Rd	12	10.9	9.9	4.5	28.0	8.1	1.28	7.4	12	7.1	7.1	6.7	7.3	0.3	-0.28	7.1	
Mangaohoi Stm at South Branch Maru Rd	12	1.9	1.8	1.3	3.1	0.7	0.82	1.7	12	7.4	7.4	7.0	7.6	0.2	-0.62	7.4	
Mangaokewa Stm at Lawrence St Bridge	12	5.5	4.4	2.3	10.9	4.0	0.74	5.5	12	7.3	7.3	7.0	7.5	0.3	-0.44	7.3	
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	31.8	15.0	9.6	220.0	6.1	<u>3.00</u>	15.9	12	7.2	7.0	6.7	7.8	0.7	0.51	7.2	
Mangapu River at Otorohanga	12	21.5	15.7	4.6	66.0	16.8	<u>1.72</u>	12.2	12	7.5	7.5	7.2	8.0	0.3	1.01	7.5	
Mangatutu Stm (Waikeria) at Walker Rd Br	12	14.8	3.3	2.4	127.0	2.2	<u>2.97</u>	3.6	12	7.1	7.1	6.6	7.4	0.4	-0.42	7.2	
Mangauika Stm at Te Awamutu Borough W/S Intake	12	4.5	2.9	1.0	15.9	4.1	<u>1.80</u>	1.6	12	7.3	7.3	7.2	7.6	0.2	0.88	7.3	
Ohote Stm at Whatawhata/Horotiu Rd	12	15.2	13.3	9.0	23.0	7.8	0.57	13.0	12	6.8	6.8	6.5	7.0	0.1	-0.72	6.8	
Puniu River at Bartons Corner Rd Br	12	28.4	6.0	2.8	280.0	2.6	<u>3.01</u>	6.1	12	7.0	7.1	6.7	7.3	0.4	-0.29	7.2	
Waipa River at Mangaokewa Rd	12	2.3	2.2	1.2	4.1	1.1	0.74	2.2	12	7.3	7.3	7.2	7.5	0.2	0.74	7.3	
Waipa River at Pirongia-Ngutunui Rd Br	12	18.0	16.1	6.3	43.0	8.0	1.25	10.9	12	7.2	7.2	7.0	7.4	0.2	0.47	7.2	
Waipa River at SH3 Otorohanga	12	7.5	3.6	1.8	26.0	9.2	1.48	3.6	12	7.1	7.2	6.9	7.4	0.3	-0.09	7.3	
Waitomo Stm at SH31 Otorohanga	12	26.6	22.0	5.1	90.0	20.1	<u>1.96</u>	11.9	12	7.6	7.6	7.4	7.9	0.2	0.25	7.7	
Waitomo Stm at Tumutumu Rd	12	11.9	6.9	2.1	52.0	4.4	<u>2.32</u>	5.7	12	7.8	7.8	7.6	8.0	0.2	-0.13	7.9	
Tributaries to the upper Waikato River																	
Kawaunui Stm at SH5 Br	12	15.1	3.7	2.4	135.0	1.1	<u>3.00</u>	4.3	12	6.8	6.9	6.3	7.1	0.3	-0.75	6.9	
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	11.0	4.6	4.0	72.0	2.2	<u>2.94</u>	4.5	12	7.3	7.4	7.1	7.5	0.1	-0.82	7.4	
Mangakara Stm (Reporoa) at SH5	12	9.6	6.0	3.5	47.0	3.3	<u>2.80</u>	6.0	12	7.0	7.0	6.6	7.2	0.3	-0.50	7.0	
Mangakino Stm (Whakamaru) at Sandel Rd	12	2.3	1.5	0.6	8.2	0.8	<u>2.15</u>	1.5	12	7.3	7.3	7.0	7.6	0.2	-0.15	7.4	
Otamakokore Stm at Hossack Rd	12	5.0	3.6	2.2	22.0	1.6	<u>2.90</u>	3.6	12	7.9	8.0	7.0	8.3	0.2	-1.47	8.0	
Pueto Stm at Broadlands Rd Br	11	3.1	2.8	2.2	4.7	0.8	1.09	2.6	11	7.4	7.4	7.2	7.6	0.2	-0.08	7.4	
Tahunaatara Stm at Ohakuri Rd	12	10.1	3.3	1.7	83.0	1.6	<u>2.98</u>	2.9	12	7.5	7.5	7.1	7.8	0.3	-0.46	7.5	
Torepatutahi Stm at Vaile Rd Br	12	1.6	1.6	0.7	2.9	1.3	0.28	1.1	12	7.2	7.3	6.8	7.4	0.2	-0.84	7.2	
Waiotapu Stm at Campbell Rd Br	12	13.1	7.1	5.1	62.0	3.1	<u>2.47</u>	6.7	12	5.3	5.7	3.7	5.9	0.5	-1.58	5.6	
Waiotapu Stm at Homestead Rd Br	12	18.9	12.6	5.6	71.0	6.4	<u>2.14</u>	11.7	12	6.7	6.8	5.7	7.0	0.3	-1.73	6.8	
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	9.1	5.1	3.7	34.0	3.6	<u>1.98</u>	5.1	12	7.6	7.6	7.3	7.8	0.1	-0.93	7.7	
Whirinaki Stm at Corbett Rd	12	0.8	0.4	0.3	4.7	0.2	<u>2.92</u>	0.4	12	7.3	7.3	7.0	7.4	0.2	-0.85	7.3	
West Coast																	
Awakino River at Gribbon Rd	12	8.2	1.2	0.7	83.0	0.6	<u>3.01</u>	1.6	12	7.4	7.4	6.9	7.9	0.3	0.16	7.4	
Awakino River at SH3 Awakau Rd Junction	12	12.3	5.9	1.1	82.0	4.9	<u>2.78</u>	4.6	12	7.6	7.5	7.1	8.3	0.5	0.70	7.5	
Manganui River at Off Manganui Rd	12	12.7	5.4	2.3	90.0	4.1	<u>2.94</u>	5.7	12	7.3	7.4	7.0	7.6	0.2	-0.43	7.4	
Mangaotaki River at SH3 Br	12	8.9	6.0	2.5	30.0	5.1	<u>1.73</u>	5.8	12	7.7	7.7	7.4	7.9	0.3	-0.09	7.8	
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	9.7	5.4	2.8	40.0	5.4	<u>2.11</u>	4.4	12	7.8	7.9	7.4	8.1	0.4	-0.44	7.8	
Mokau River at Awakau Rd	12	29.2	20.8	4.4	98.0	22.7	1.48	15.2	12	7.3	7.3	7.0	7.5	0.2	-0.36	7.4	
Mokau River at Mangaokewa Rd (Off SH30)	12	4.3	2.6	2.2	19.5	1.5	<u>2.89</u>	2.9	12	7.2	7.2	7.0	7.4	0.1	0.00	7.2	
Mokau River at Totoro Rd Recorder	12	18.1	8.6	2.4	90.0	12.5	<u>2.44</u>	7.3	12	7.5	7.6	7.3	8.0	0.3	0.78	7.6	
Mokauiti Stm at Three Way Point - Aria	12	27.3	16.1	7.0	120.0	16.1	<u>2.40</u>	13.0	12	7.2	7.2	7.1	7.5	0.2	0.69	7.3	
Ohautira Stm at Waingaro Te Uku Rd	12	31.4	14.4	5.4	172.0	21.8	<u>2.41</u>	9.3	12	7.2	7.3	6.8	7.4	0.2	-1.35	7.3	
Oparau River at Langdon Rd (Off Okupata Rd)	12	11.6	3.8	1.7	88.0	3.6	<u>2.88</u>	2.9	12	7.4	7.3	7.1	7.9	0.4	0.65	7.5	
Tawarau River at Off Speedies Rd	12	8.0	4.6	2.0	29.0	5.4	<u>1.80</u>	3.8	12	7.9	7.9	7.5	8.3	0.4	0.01	7.9	
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	26.3	11.0	5.4	105.0	15.9	<u>1.71</u>	9.1	12	7.5	7.6	6.9	7.7	0.2	-1.44	7.6	
Waitetuna River at Te Uku-Waingaro Rd	12	80.7	16.5	6.9	720.0	32.5	<u>2.97</u>	11.1	12	7.2	7.3	6.8	7.4	0.3	-0.92	7.3	
Inflows to Lake Taupo																	
Hinemaiaia River at SH1	12	1.6	1.2	0.7	5.9	0.5	<u>2.35</u>	1.1	12	7.4	7.4	7.0	7.6	0.2	-0.84	7.4	
Kuratau River at SH41 Moerangi	12	1.8	1.9	0.9	2.9	0.5	0.01	1.6	12	7.1	7.1	7.0	7.4	0.1	1.09	7.1	
Kuratau River at 43 Te Rae Street	12	1.6	1.1	0.7	6.9	0.5	<u>2.87</u>	1.2	12	7.4	7.5	7.0	7.8	0.4	-0.18	7.5	
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	4.5	3.3	1.8	16.2	2.5	<u>2.40</u>	2.8	12	7.3	7.4	7.0	7.5	0.1	-1.23	7.4	
Tauranga-Taupo River at Te Kono Slackline	11	1.3	0.8	0.4	7.2	0.6	<u>2.75</u>	0.7	11	7.3	7.3	7.1	7.6	0.1	0.10	7.4	
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	12	3.1	1.7	0.9	19.9	0.7	<u>2.96</u>	1.3	12	7.4	7.5	7.1	7.7	0.3	-0.25	7.4	
Tokaanu Stm at Off SH41 Turangi	12	2.0	0.3	0.1	21.0	0.3	<u>3.01</u>	0.2	12	7.1	7.2	6.9	7.4	0.2	-0.06	7.2	
Waihaha River at SH32	12	0.9	0.7	0.4	2.7	0.5	<u>2.06</u>	0.6	12	7.2	7.2	6.9	7.3	0.3	-0.70	7.3	
Waitahanui River at Blake Rd	12	1.7	1.0	0.4	8.6	0.9	<u>2.52</u>	0.7	12	7.4	7.5	7.0	7.6	0.3	-0.52	7.5	
Whangamata Stm (Kinloch) at Whangamata Rd	12	2.1	2.0	0.9	3.9	0.7	0.68	1.9	12	7.3	7.4	6.9	7.7	0.3	-0.46	7.4	
Whanganui Stm at Lakeside Lake Taupo	12	1.8	1.6	0.9	4.1	0.8	1.34	1.4	12	7.3	7.4	7.1	7.6	0.2	-0.06	7.4	
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	5.3	3.4	1.9	28.0	2.1	<u>2.91</u>	3.0	12	7.3	7.4	7.0	7.5	0.2	-0.71	7.4	

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

E. Coli (n/100mL)

Location	07-11							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River at Old Maratoto Rd	4	165	125	90	320	140	0.96	250
Kauaeranga River at Smiths Cableway/Recorder	4	190	140	69	410	201	0.91	150
Ohinemuri River at Queens Head	4	73	63	37	130	64	0.59	115
Ohinemuri River at SH25 Br	4	218	195	51	430	205	0.48	215
Tairua River at Morrisons Br Hikuaui	4	66	47	42	130	48	1.13	120
Tapu River at Tapu-Coroglen Rd	4	92	95	47	130	67	-0.13	85
Waiau River at E309 Rd Ford	4	116	118	56	170	79	-0.13	160
Waitekauri River at U/S Ohinemuri Conflu	4	154	120	7	370	262	0.45	150
Waiwawa River at SH25 Coroglen	4	108	90	70	180	65	0.95	170
Wharekawa River at SH25	4	155	165	120	170	30	-1.03	335
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	4	476	145	14	1600	848	1.12	55
Oraka Stm at Lake Rd	4	383	370	240	550	155	0.34	490
Piako River at Kiwitahi	4	4093	1120	130	14000	7615	1.11	670
Piako River at Paeroa-Tahuna Rd Br	4	1723	735	420	5000	2455	1.13	460
Piakonui Stm at Piakonui Rd	4	103	105	60	140	45	-0.25	95
Waihou River at Okauia	4	445	425	230	700	300	0.29	305
Waihou River at Whites Rd	4	56	57	31	80	28	-0.08	45
Waihotu Stm at Waihotu Rd (Off SH5)	4	120	125	39	190	111	-0.17	35
Waiomou Stm at Matamata-Tauranga Rd	4	378	335	230	610	245	0.68	340
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	4	683	270	190	2000	925	1.15	460
Waitoa River at Landsdowne Rd Br	4	1030	700	420	2300	1040	1.04	650
Waitoa River at Mellon Rd Recorder	4	2208	1800	330	4900	2685	0.64	800
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otawa Rd Br opp Moseley Rd	-	-	-	-	-	-	-	-
Awaroa Stm (Rotowaro) at Sansons Br, Rotowaro-Huntly Rd	4	275	295	130	380	140	-0.61	310
Karapiro Stm at Hickey Rd Bridge	4	2455	750	320	8000	4090	1.13	510
Kirikiri Stm at Tauhara Dr	4	1235	900	240	2900	1430	0.88	775
Komakorau Stm at Henry Rd	4	1325	1250	900	1900	650	0.48	1800
Little Waipa Stm at Arapuni - Putaruru Rd	4	140	145	100	170	60	-0.15	120
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	4	6163	4150	350	16000	11175	0.59	1550
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	4	705	520	280	1500	790	0.82	650
Mangaone Stm at Annebrooke Rd Br	4	1218	1000	570	2300	965	0.86	1250
Mangaonua Stm at Harbutt Rd Br	4	558	530	170	1000	485	0.26	415
Mangaonua Stm at Hoeka Rd	4	4575	5200	800	7100	4850	-0.37	2750
Mangatangi River at SH2 Maramarua	-	-	-	-	-	-	-	-
Mangatawhiri River at Lyons Rd At Buckingham Br	-	-	-	-	-	-	-	-
Mangawara Stm at Rutherford Rd Br	-	-	-	-	-	-	-	-
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	4	1950	1700	500	3900	2300	0.43	1500
Matahuru Stm at Waiterimu Road Below Confluence	-	-	-	-	-	-	-	-
Ohaeroa Stm at SH22 Br	-	-	-	-	-	-	-	-
Opuatia Stm at Ponganui Rd	4	578	520	320	950	385	0.62	450
Pokaiwhenua Stm at Arapuni - Putaruru Rd	4	448	140	110	1400	675	1.15	165
Waerenga Stm at Taniwha Rd	4	613	415	220	1400	625	1.04	530
Waitawhirihiri Stm at Edgcumbe Street	4	8075	1550	1200	28000	13650	1.15	1500
Whakapipi Stm at SH22 Br	-	-	-	-	-	-	-	-
Whakauru Stm at U/S SH1 Br	4	818	585	300	1800	865	0.96	600
Whangamarino River at Island Block Rd	-	-	-	-	-	-	-	-
Whangamarino River at Jefferies Rd Br	-	-	-	-	-	-	-	-
Whangape Stm at Rangiriri-Glen Murray Rd	-	-	-	-	-	-	-	-

Enterococci (n/100ml)

Location	07-11							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River at Old Maratoto Rd	4	101	62	32	250	118	1.07	75
Kauaeranga River at Smiths Cableway/Recorder	4	81	79	35	130	69	0.11	115
Ohinemuri River at Queens Head	4	18	16	7	33	21	0.30	24
Ohinemuri River at SH25 Br	4	57	26	16	160	77	1.13	85
Tairua River at Morrisons Br Hikuaui	4	54	18	11	170	82	1.15	51
Tapu River at Tapu-Coroglen Rd	4	68	47	19	160	84	0.92	60
Waiau River at E309 Rd Ford	4	106	56	34	280	128	1.12	155
Waitekauri River at U/S Ohinemuri Conflu	4	13	9	6	28	13	1.01	26
Waiwawa River at SH25 Coroglen	4	89	51	15	240	142	0.91	150
Wharekawa River at SH25	4	81	67	20	170	78	0.71	250
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	4	171	150	13	370	249	0.33	140
Oraka Stm at Lake Rd	4	185	110	80	440	190	1.12	260
Piako River at Kiwitahi	4	2388	255	140	8900	4425	1.15	465
Piako River at Paeroa-Tahuna Rd Br	4	615	490	280	1200	480	0.93	470
Piakonui Stm at Piakonui Rd	4	189	90	45	530	263	1.11	110
Waihou River at Okauia	4	120	95	80	210	70	1.09	175
Waihou River at Whites Rd	4	58	48	25	110	55	0.69	36
Waihotu Stm at Waihotu Rd (Off SH5)	4	100	65	1	270	170	0.78	25
Waiomou Stm at Matamata-Tauranga Rd	4	335	345	50	600	530	-0.01	205
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	4	696	230	25	2300	1178	1.12	255
Waitoa River at Landsdowne Rd Br	4	370	385	210	500	150	-0.42	385
Waitoa River at Mellon Rd Recorder	4	865	640	380	1800	770	1.01	435
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otawa Rd Br opp Moseley Rd	-	-	-	-	-	-	-	-
Awaroa Stm (Rotowaro) at Sansons Br, Rotowaro-Huntly Rd	4	99	85	25	200	143	0.23	80
Karapiro Stm at Hickey Rd Bridge	4	480	295	130	1200	630	0.99	240
Kirikiri Stm at Tauhara Dr	4	1345	670	440	3600	1710	1.12	670
Komakorau Stm at Henry Rd	4	633	450	330	1300	545	1.06	825
Little Waipa Stm at Arapuni - Putaruru Rd	4	62	29	20	170	77	1.14	73
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	4	5273	1950	190	17000	9155	1.10	1500
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	4	220	240	70	330	140	-0.60	260
Mangaone Stm at Annebrooke Rd Br	4	920	850	280	1700	860	0.36	890
Mangaonua Stm at Harbutt Rd Br	4	313	255	220	520	185	0.98	405
Mangaonua Stm at Hoeka Rd	4	1895	1700	480	3700	1710	0.49	1550
Mangatangi River at SH2 Maramarua	-	-	-	-	-	-	-	-
Mangatawhiri River at Lyons Rd At Buckingham Br	-	-	-	-	-	-	-	-
Mangawara Stm at Rutherford Rd Br	-	-	-	-	-	-	-	-
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	4	1433	1210	310	3000	2035	0.34	1000
Matahuru Stm at Waiterimu Road Below Confluence	-	-	-	-	-	-	-	-
Ohaeroa Stm at SH22 Br	-	-	-	-	-	-	-	-
Opuatia Stm at Ponganui Rd	4	220	210	28	430	351	0.05	160
Pokaiwhenua Stm at Arapuni - Putaruru Rd	4	145	135	50	260	170	0.15	125
Waerenga Stm at Taniwha Rd	4	211	195	25	430	288	0.22	240
Waitawhirihiri Stm at Edgcumbe Street	4	8588	570	210	33000	16625	1.15	1250
Whakapipi Stm at SH22 Br	-	-	-	-	-	-	-	-
Whakauru Stm at U/S SH1 Br	4	448	255	180	1100	535	1.07	430
Whangamarino River at Island Block Rd	-	-	-	-	-	-	-	-
Whangamarino River at Jefferies Rd Br	-	-	-	-	-	-	-	-
Whangape Stm at Rangiriri-Glen Murray Rd	-	-	-	-	-	-	-	-

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

Waipa River and Tributaries																	
Kaniwhaniwha Stm at Wright Rd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mangaohoi Stm at South Branch Maru Rd	4	102	55	49	250	106	1.15	55	4	73	76	10	130	114	-0.02	120	
Mangaokewa Stm at Lawrence St Bridge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mangapu River at Otorohanga	4	1833	1385	160	4400	2935	0.55	635	4	633	90	50	2300	1135	1.15	170	
Mangatutu Stm (Waikeria) at Walker Rd Br	4	630	540	240	1200	740	0.35	305	4	359	260	15	900	603	0.60	180	
Manguaika Stm at Te Awamutu Borough W/S Intake	4	188	170	90	320	185	0.24	24	4	160	150	90	250	100	0.43	35	
Ohote Stm at Whatawhata/Horotiu Rd	4	835	520	400	1900	780	1.13	390	4	233	200	120	410	185	0.69	85	
Puniu River at Bartons Corner Rd Br	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Waipa River at Mangaokewa Rd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Waipa River at Pirongia-Ngutunui Rd Br	4	873	795	200	1700	1155	0.21	360	4	148	145	110	190	75	0.03	135	
Waipa River at SH3 Otorohanga	4	1678	155	100	6300	3125	1.15	280	4	1114	120	16	4200	2102	1.15	120	
Waitomo Stm at SH31 Otorohanga	4	903	330	150	2800	1345	1.14	340	4	153	108	27	370	244	0.61	135	
Waitomo Stm at Tumutumu Rd	4	520	185	110	1600	760	1.15	250	4	150	118	4	360	260	0.42	140	
Tributaries to the upper Waikato River																	
Kawaunui Stm at SH5 Br	4	220	255	70	300	160	-0.71	405	4	175	115	40	430	210	0.99	255	
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	4	315	195	170	700	270	1.15	225	4	70	22	17	220	104	1.15	85	
Mangakara Stm (Reporoa) at SH5	4	163	155	50	290	205	0.07	275	4	392	65	36	1400	687	1.15	310	
Mangakino Stm (Whakamaru) at Sandel Rd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Otamakokore Stm at Hossack Rd	4	215	200	160	300	70	0.80	300	4	156	54	16	500	269	1.11	110	
Pueto Stm at Broadlands Rd Br	4	22	20	16	32	9	0.86	31	4	18	15	1	40	30	0.29	25	
Tahunaatara Stm at Ohakuri Rd	4	348	310	70	700	445	0.32	190	4	58	45	21	120	55	0.89	80	
Torepatutahi Stm at Vaile Rd Br	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Waiotapu Stm at Campbell Rd Br	4	2	2	1	3	1	-0.41	2	4	2	1	1	5	3	1.12	5	
Waiotapu Stm at Homestead Rd Br	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Waipapa Stm (Mokai) at Tirohanga Rd Br	4	75	75	30	120	50	0.00	150	4	218	68	36	700	354	1.14	125	
Whirinaki Stm at Corbett Rd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
West Coast																	
Awakino River at Gribbon Rd	4	983	52	28	3800	1901	1.15	105	4	244	32	10	900	447	1.15	32	
Awakino River at SH3 Awakau Rd Junction	4	1547	70	50	6000	2986	1.15	290	4	485	18	5	1900	954	1.15	29	
Manganui River at Off Manganui Rd	4	3853	185	40	15000	7505	1.15	220	4	742	30	7	2900	1457	1.15	40	
Mangaotaki River at SH3 Br	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Marokopa River at Speedies Rd (Off Te Anga Rd)	4	169	135	75	330	143	0.89	260	4	46	34	6	110	74	0.55	48	
Mokau River at Awakau Rd	4	893	175	120	3100	1545	1.15	300	4	58	19	13	180	88	1.15	29	
Mokau River at Mangaokewa Rd (Off SH30)	4	350	131	40	1100	620	1.06	195	4	256	58	7	900	479	1.13	61	
Mokau River at Totoro Rd Recorder	4	1725	190	120	6400	3160	1.15	510	4	574	42	10	2200	1123	1.15	115	
Mokauiti Stm at Three Way Point - Aria	4	4410	275	90	17000	8500	1.15	345	4	995	82	17	3800	1950	1.15	145	
Ohautira Stm at Waingaro Te Uku Rd	4	355	270	80	800	430	0.78	455	4	172	155	7	370	197	0.38	130	
Oparau River at Langdon Rd (Off Okupata Rd)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tawarau River at Off Speedies Rd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Waitetuna River at Te Uku-Waingaro Rd	4	538	480	190	1000	525	0.46	460	4	313	205	42	800	484	0.81	180	
Inflows to Lake Taupo																	
Hinemaiaia River at SH1	4	18	18	17	19	2	0.49	17	4	8	2	1	30	15	1.15	5	
Kuratau River at SH41 Moerangi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Kuratau River at 43 Te Rae Street	4	55	64	11	80	42	-1	39	4	50	5	1	190	95	1	25	
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	4	60	65	20	90	50	-0.37	53	4	176	93	19	500	298	0.94	50	
Tauranga-Taupo River at Te Kono Slackline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tokaanu Stm at Off SH41 Turangi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Waihaha River at SH32	4	19	7	2	60	30	1.13	9	4	38	6	2	140	70	1.15	6	
Waitahanui River at Blake Rd	4	20	17	10	35	19	0.46	18	4	13	6	5	35	16	1.14	16	
Whangamata Stm (Kinloch) at Whangamata Rd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Whanganui Stm at Lakeside Lake Taupo	4	31	31	13	50	31	0.04	41	4	50	7	4	180	89	1.15	15	
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	4	165	85	30	460	220	1.09	100	4	177	27	5	650	339	1.14	72	

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

Temperature (°C)

Location	Count	Mean	Median	Min	Max	IQR	Skew	07-11
								Median
Coromandel								
Hikutai River at Old Maratoto Rd	12	15.4	16.0	9.5	21.2	4.6	0.14	15.4
Kauaeranga River at Smiths Cableway/Recorder	12	15.6	15.8	10.4	22.4	5.5	0.44	15.6
Ohinemuri River at Queens Head	12	17.0	17.0	12.3	23.1	6.6	0.21	16.6
Ohinemuri River at SH25 Br	12	16.3	16.3	12.4	21.4	5.8	0.17	16.9
Tairua River at Morrisons Br Hikuai	12	16.8	17.4	11.9	22.8	5.7	0.24	17.0
Tapu River at Tapu-Coroglen Rd	12	15.4	15.4	9.5	21.8	5.5	0.23	15.3
Waiau River at E309 Rd Ford	12	15.0	14.9	10.5	19.9	3.9	0.34	14.9
Waitekauri River at U/S Ohinemuri Conflu	12	15.8	15.8	11.2	22.0	5.2	0.30	15.9
Waiwawa River at SH25 Coroglen	12	16.2	16.5	11.5	24.3	5.8	0.57	16.1
Wharekawa River at SH25	12	16.4	17.3	11.8	21.3	6.5	-0.08	16.4
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	13.8	13.6	7.7	19.1	4.4	-0.13	13.5
Oraka Stm at Lake Rd	12	13.8	14.3	9.6	17.1	3.9	-0.23	14.7
Piako River at Kiwitahi	12	16.3	16.2	10.9	22.3	6.2	0.34	16.1
Piako River at Paeroa-Tahuna Rd Br	12	15.8	15.3	10.5	22.6	6.5	0.43	15.2
Piakonui Stm at Piakonui Rd	12	13.6	13.4	9.8	18.2	3.3	0.34	13.2
Waihou River at Okauia	12	14.0	14.5	9.4	17.8	4.0	-0.22	14.8
Waihou River at Whites Rd	12	13.1	13.1	11.9	14.2	1.2	-0.05	13.5
Waiohotu Stm at Waiohotu Rd (Off SH5)	12	11.1	11.8	6.1	15.9	4.8	-0.26	11.4
Waiomou Stm at Matamata-Tauranga Rd	12	13.2	13.8	8.1	18.4	4.9	-0.10	13.8
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	16.1	15.1	8.6	22.9	6.1	-0.04	16.2
Waitoa River at Landsdowne Rd Br	12	15.7	15.5	10.9	21.6	5.1	0.39	15.5
Waitoa River at Mellon Rd Recorder	12	15.9	15.8	10.9	22.4	6.0	0.32	15.7
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	16.9	15.7	8.7	24.9	7.2	0.11	17.1
Awaroa Stm (Rotowaro) at Sansons Br, Rotowaro-Huntly Rd	12	14.5	13.2	7.1	20.8	7.2	0.06	14.6
Karapiro Stm at Hickey Rd Bridge	12	15.3	15.0	10.9	21.3	4.7	0.53	15.0
Kirikiri Stm at Tauhara Dr	12	15.7	15.5	12.6	19.6	3.4	0.45	15.3
Komakorau Stm at Henry Rd	12	15.4	14.2	8.9	21.6	6.9	0.19	14.8
Little Waipa Stm at Arapuni - Putaruru Rd	12	13.9	14.3	10.3	17.1	2.7	-0.20	14.8
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	12	15.6	15.6	11.4	19.9	4.1	0.14	15.4
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	13.6	14.0	9.6	18.2	4.5	0.06	14.9
Mangaone Stm at Annebrooke Rd Br	12	14.2	14.1	11.0	19.0	2.7	0.61	13.8
Mangaonua Stm at Harbutt Rd Br	12	14.9	14.3	10.8	19.9	4.1	0.51	14.4
Mangaonua Stm at Hoeka Rd	12	14.4	13.9	11.1	19.3	4.2	0.61	13.8
Mangatangi River at SH2 Maramara	12	16.3	15.6	8.7	23.6	5.7	-0.02	16.3
Mangatawhiri River at Lyons Rd At Buckingham Br	12	16.6	15.4	9.0	24.5	5.9	0.07	16.9
Mangawara Stm at Rutherford Rd Br	12	15.5	15.3	8.4	22.5	5.8	-0.07	15.0
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	14.7	14.3	11.4	18.8	3.1	0.34	14.5
Matahuru Stm at Waiterimu Road Below Confluence	12	15.1	15.2	7.9	21.8	6.1	-0.18	14.7
Ohaeroa Stm at SH22 Br	12	14.3	14.4	8.2	20.8	3.8	-0.06	14.4
Opuatia Stm at Ponganui Rd	12	14.9	14.5	7.8	22.3	5.6	0.00	14.8
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	13.6	14.0	9.2	17.7	3.8	-0.07	14.5
Waerenga Stm at Taniwha Rd	12	14.4	14.5	6.6	21.9	5.6	-0.21	14.2
Waitawhiriwhiri Stm at Edgecumbe Street	12	16.6	16.7	12.7	20.8	3.8	0.09	16.5
Whakapipi Stm at SH22 Br	12	15.5	15.1	8.9	22.0	4.7	-0.12	15.3
Whakauru Stm at U/S SH1 Br	12	11.7	12.5	7.6	15.4	4.0	-0.28	12.8
Whangamarino River at Island Block Rd	12	17.6	16.9	9.2	24.8	8.4	-0.10	17.1
Whangamarino River at Jefferies Rd Br	12	15.0	14.9	7.3	23.2	6.1	0.01	14.5
Whangape Stm at Rangiriri-Glen Murray Rd	12	16.4	16.4	8.5	24.8	7.3	0.06	16.5

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

Waipa River and Tributaries								
Kaniwhaniwha Stm at Wright Rd	12	14.0	12.8	8.1	19.9	5.4	0.19	14.5
Mangaohoi Stm at South Branch Maru Rd	12	14.1	14.0	10.6	17.6	3.0	0.06	13.9
Mangaokewa Stm at Lawrence St Bridge	12	13.3	13.1	7.2	18.4	5.4	-0.07	12.9
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	17.0	16.7	11.0	23.5	6.8	0.06	16.0
Mangapu River at Otorohanga	12	15.5	15.6	9.3	22.2	6.0	0.09	15.7
Mangatutu Stm (Waikeria) at Walker Rd Br	12	14.9	14.9	10.0	20.0	4.5	-0.06	14.0
Mangauika Stm at Te Awamutu Borough W/S Intake	12	12.2	11.5	8.2	16.4	4.2	0.18	12.5
Ohote Stm at Whatawhata/Horotiu Rd	12	16.2	16.1	11.5	22.1	4.9	0.23	15.6
Puniu River at Bartons Corner Rd Br	12	15.8	15.8	10.1	21.8	4.9	-0.05	14.6
Waipa River at Mangaokewa Rd	12	13.7	13.1	7.5	20.7	5.8	0.13	13.9
Waipa River at Pirongia-Ngutunui Rd Br	12	14.8	13.7	8.1	21.3	5.9	0.12	15.2
Waipa River at SH3 Otorohanga	12	15.1	15.0	8.9	21.1	6.3	0.06	15.1
Waitomo Stm at SH31 Otorohanga	12	14.5	13.3	9.7	20.4	4.8	0.34	14.9
Waitomo Stm at Tumutumu Rd	12	13.8	13.2	10.2	18.8	3.8	0.41	14.0

Tributaries to the upper Waikato River								
Kawaunui Stm at SH5 Br	12	14.5	14.7	10.3	17.0	3.7	-0.45	15.5
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	12.8	13.4	9.2	15.7	4.0	-0.36	13.4
Mangakara Stm (Reporoa) at SH5	12	12.9	13.3	9.2	15.9	3.9	-0.23	14.0
Mangakino Stm (Whakamaru) at Sandel Rd	12	12.2	12.1	8.2	16.2	4.1	0.23	12.3
Otamakokore Stm at Hossack Rd	12	19.3	20.1	15.0	23.3	4.6	-0.25	21.1
Pueto Stm at Broadlands Rd Br	11	13.7	14.4	10.2	16.1	3.6	-0.35	14.3
Tahunaatara Stm at Ohakuri Rd	12	13.1	13.7	8.1	17.4	4.8	-0.20	14.1
Torepatutahi Stm at Vaile Rd Br	12	14.2	14.4	9.4	17.2	4.4	-0.39	14.7
Waiotapu Stm at Campbell Rd Br	12	26.6	26.8	22.0	30.7	3.4	-0.36	28.5
Waiotapu Stm at Homestead Rd Br	12	17.8	18.7	13.0	21.5	4.7	-0.27	19.2
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	21.4	22.0	17.6	25.0	3.4	-0.18	22.2
Whirinaki Stm at Corbett Rd	12	12.1	12.2	9.9	13.3	1.9	-0.59	12.6

West Coast								
Awakino River at Gribbon Rd	12	12.9	12.6	7.3	17.9	4.2	0.01	12.8
Awakino River at SH3 Awakau Rd Junction	12	14.5	13.9	8.0	21.3	6.4	0.22	14.7
Manganui River at Off Manganui Rd	12	13.8	14.1	7.3	19.2	5.6	-0.06	13.8
Mangaotaki River at SH3 Br	12	13.5	13.1	7.9	18.8	5.4	0.05	13.5
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	13.4	12.2	8.3	19.5	5.3	0.25	14.4
Mokau River at Awakau Rd	12	14.9	14.2	8.0	22.0	6.6	0.20	14.8
Mokau River at Mangaokewa Rd (Off SH30)	12	12.4	12.4	6.4	17.5	4.5	-0.19	12.7
Mokau River at Totoro Rd Recorder	12	14.7	13.8	8.2	21.8	6.1	0.16	14.5
Mokauiti Stm at Three Way Point - Aria	12	14.9	14.4	8.2	21.8	6.4	0.11	14.8
Ohautira Stm at Waingaro Te Uku Rd	12	13.0	12.5	5.3	19.5	6.5	-0.05	13.0
Oparau River at Langdon Rd (Off Okupata Rd)	11	13.1	12.5	7.2	18.2	6.2	0.11	14.6
Tawarau River at Off Speedies Rd	12	13.4	12.4	7.9	19.3	5.2	0.15	13.7
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	14.8	13.4	6.8	21.8	7.0	0.06	15.2
Waitetuna River at Te Uku-Waingaro Rd	12	13.7	12.7	6.7	20.0	5.9	0.07	14.4

Inflows to Lake Taupo								
Hinemaiaia River at SH1	12	11.1	11.8	7.1	15.5	5.1	-0.10	11.3
Kuratau River at SH41 Moerangi	12	9.6	9.6	6.2	13.5	3.5	0.35	9.5
Kuratau River at 43 Te Rae Street	12	13.2	13.4	7.6	19.0	6.2	0.06	13.4
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	11.1	11.1	8.8	14.2	2.7	0.27	10.9
Tauranga-Taupo River at Te Kono Slackline	12	10.6	10.8	6.3	15.2	5.3	-0.02	10.2
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	12	12.8	12.2	6.6	19.6	7.0	0.29	13.1
Tokaanu Stm at Off SH41 Turangi	12	12.4	12.0	11.2	14.1	1.9	0.54	12.3
Waihaha River at SH32	12	11.4	11.1	7.5	16.1	3.6	0.50	11.4
Waitahanui River at Blake Rd	12	10.7	10.8	8.8	12.6	2.1	-0.04	10.8
Whangamata Stm (Kinloch) at Whangamata Rd	12	10.4	10.3	8.8	12.0	1.9	0.18	10.0
Whanganui Stm at Lakeside Lake Taupo	12	11.9	11.0	7.1	18.1	5.6	0.47	11.4
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	11.6	11.4	7.8	17.1	4.2	0.56	11.6

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

Calcium - dissolved (g.m⁻³)

Magnesium - dissolved (g.m⁻³)

Location	Count	Mean	Median	Min	Max	IQR	Skew
Coromandel							
Hikutaia River at Old Maratoto Rd	12	3.72	3.80	2.70	4.30	0.75	-0.75
Kauaeranga River at Smiths Cableway/Recorder	12	4.05	4.15	2.20	5.00	0.85	-1.11
Ohinemuri River at Queens Head	12	20.19	16.20	5.70	36.00	23.45	0.15
Ohinemuri River at SH25 Br	12	2.58	2.50	2.20	3.10	0.45	0.40
Tairua River at Morrisons Br Hikuai	12	1.86	1.90	1.33	2.20	0.36	-0.72
Tapu River at Tapu-Coroglen Rd	12	5.72	5.90	4.20	6.90	1.35	-0.38
Waiau River at E309 Rd Ford	12	3.63	3.80	2.70	4.50	1.10	-0.04
Waitekauri River at U/S Ohinemuri Conflu	12	7.49	7.30	4.10	13.70	4.10	0.74
Waiwawa River at SH25 Coroglen	12	2.80	2.85	1.79	3.50	0.65	-0.50
Wharekawa River at SH25	12	1.79	1.78	1.50	2.10	0.37	0.10
Hauraki							
Mangawhero Stm (Kaihere) at Mangawara Rd	12	3.92	4.00	2.80	5.00	1.45	-0.14
Oraka Stm at Lake Rd	12	4.23	4.25	2.90	5.30	0.90	-0.21
Piako River at KIWITAHU	12	7.83	7.75	6.50	8.90	0.70	-0.19
Piako River at Paeroa-Tahuna Rd Br	12	11.00	11.25	7.90	12.50	1.00	-1.53
Piakonui Stm at Piakonui Rd	12	2.53	2.50	1.80	4.10	0.95	0.92
Waihou River at Okauia	12	3.70	3.65	2.90	4.70	0.70	0.47
Waihou River at Whites Rd	12	2.57	2.50	2.40	2.90	0.10	1.42
Waiohotu Stm at Waiohotu Rd (Off SH5)	12	1.52	1.50	1.21	1.79	0.30	0.01
Waiomou Stm at Matamata-Tauranga Rd	12	2.39	2.30	1.84	3.20	0.83	0.43
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	8.88	8.95	5.10	13.20	2.95	0.15
Waitoa River at Landsdowne Rd Br	12	8.95	8.65	7.70	10.40	1.45	0.37
Waitoa River at Mellon Rd Recorder	12	11.60	11.95	8.90	12.70	1.05	-1.35
Tributaries to the lower Waikato River							
Awaroa River (Waiuku) at Otaura Rd Br opp Moseley Rd	12	11.37	9.05	7.70	18.70	6.10	0.66
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	45.25	43.50	29.00	78.00	17.00	1.02
Karapiro Stm at Hickey Rd Bridge	12	7.73	7.35	5.40	13.80	2.65	1.37
Kirikiroa Stm at Tauhara Dr	12	12.36	12.10	10.40	13.80	1.25	-0.13
Komakorau Stm at Henry Rd	12	15.19	13.70	11.20	25.00	6.15	1.09
Little Waipa Stm at Arapuni - Putaruru Rd	12	4.03	4.00	3.30	4.80	0.30	0.52
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	12	12.73	12.55	10.70	15.90	3.00	0.45
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	6.81	7.10	4.60	8.10	0.55	-1.31
Mangaone Stm at Annebrooke Rd Br	12	13.31	13.20	12.00	14.40	0.65	-0.06
Mangaonua Stm at Harbutt Road Bridge	12	3.66	3.60	3.00	4.80	0.85	0.65
Mangaonua Stm at Hoeka Rd	12	10.38	10.40	8.90	11.10	0.50	-1.26
Mangatangi River at SH2 Maramarua	12	5.48	5.50	4.70	6.70	0.70	0.51
Mangatawhiri River at Lyons Rd At Buckingham Br	12	5.21	5.40	3.30	6.40	1.05	-0.88
Mangawara Stm at Rutherford Rd Br	12	11.39	10.10	9.00	17.00	3.20	1.16
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	11	13.52	13.00	11.90	18.00	1.88	1.40
Matahuru Stm at Waiterimu Road Below Confluence	12	5.98	5.85	4.70	8.00	1.20	0.64
Ohaeroa Stm at SH22 Br	12	9.78	9.45	7.60	12.50	2.25	0.41
Opuatia Stm at Ponganui Rd	11	12.88	12.80	10.20	15.80	3.70	0.04
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	4.57	4.60	3.00	5.40	0.40	-1.41
Waerenga Stm at Taniwha Rd	12	4.11	4.15	3.40	5.00	0.70	0.23
Waitawhiriwhiri Stm at Edgecumbe Street	12	13.91	13.75	12.10	16.00	1.75	0.41
Whakapipi Stm at SH22 Br	12	8.97	8.50	7.90	11.20	1.40	0.97
Whakauru Stm at U/S SH1 Br	12	2.48	2.55	2.10	2.70	0.20	-0.85
Whangamarino River at Island Block Rd	12	7.63	7.45	6.10	9.10	1.80	0.21
Whangamarino River at Jefferies Rd Br	12	6.33	6.15	5.10	7.70	1.40	0.23
Whangape Stm at Rangiriri-Glen Murray Rd	12	16.14	15.55	13.50	24.00	4.00	1.37

Count	Mean	Median	Min	Max	IQR	Skew
12	1.97	2.03	1.36	2.30	0.38	-0.84
12	1.72	1.80	0.94	2.10	0.30	-1.15
12	4.30	3.85	1.94	7.40	3.25	0.32
12	1.65	1.61	1.34	1.99	0.26	0.29
12	1.07	1.09	0.74	1.29	0.16	-0.75
12	2.40	2.45	1.74	3.00	0.45	-0.17
12	1.84	1.92	1.36	2.40	0.43	0.20
12	2.69	2.65	1.64	4.60	1.15	0.81
12	1.35	1.43	0.84	1.72	0.27	-0.67
12	1.25	1.24	0.99	1.56	0.22	0.27
12	2.02	2.04	1.66	2.40	0.49	0.03
12	2.09	2.15	1.33	2.50	0.35	-1.07
12	4.08	4.15	3.10	5.00	0.75	-0.11
12	5.33	5.45	3.90	6.40	0.55	-0.34
12	1.44	1.37	1.09	2.20	0.40	1.06
12	1.84	1.85	1.39	2.20	0.18	-0.50
12	1.51	1.51	1.35	1.64	0.12	-0.31
12	0.76	0.76	0.62	0.87	0.10	-0.44
12	1.06	1.05	0.84	1.31	0.29	0.20
12	4.11	3.95	2.30	6.10	1.25	0.15
12	4.10	3.85	2.90	5.60	1.10	0.39
12	5.76	5.90	4.30	7.30	1.55	-0.24
12	7.55	7.30	5.80	9.90	2.10	0.42
12	13.53	13.45	7.50	24.00	5.95	0.73
12	3.57	3.35	2.60	6.20	1.25	1.37
12	5.44	5.40	4.70	6.10	0.50	-0.10
12	6.31	6.45	4.90	7.00	0.75	-1.01
12	2.14	2.20	1.66	2.40	0.25	-1.10
12	4.78	4.75	3.90	5.50	0.45	-0.43
12	2.42	2.50	1.56	2.90	0.35	-1.18
12	7.27	7.20	6.40	7.90	0.75	-0.20
12	2.25	2.15	1.82	3.00	0.56	0.73
12	5.68	5.70	4.30	6.70	0.80	-0.44
12	2.73	2.80	1.98	3.30	0.50	-0.50
12	2.31	2.40	1.51	2.80	0.54	-0.82
12	5.11	5.10	3.10	6.90	0.60	-0.24
11	6.11	6.20	4.30	7.00	1.08	-1.00
12	2.87	2.80	2.10	3.50	0.70	-0.06
12	4.18	4.10	2.90	6.00	1.65	0.44
11	2.97	2.90	2.20	3.80	0.65	0.37
12	2.11	2.15	1.33	2.40	0.32	-1.47
12	2.20	2.25	1.79	2.90	0.41	0.66
12	4.91	5.05	3.60	5.90	0.90	-0.48
12	5.79	5.50	3.50	8.80	1.80	0.58
12	1.34	1.36	1.06	1.50	0.12	-1.17
12	3.64	3.80	3.00	4.40	0.80	0.04
12	3.28	3.30	2.10	3.80	0.65	-0.99
12	3.15	3.00	2.50	4.00	0.90	0.39

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

Waipa River and Tributaries														
Kaniwhaniwha Stm at Wright Rd	12	5.98	5.70	4.20	7.40	0.95	-0.14	12	2.01	1.99	1.46	2.80	0.47	0.69
Mangaohoi Stm at South Branch Maru Rd	12	3.63	3.70	2.30	4.90	0.95	-0.06	12	1.74	1.80	1.13	2.30	0.47	-0.09
Mangaokewa Stm at Lawrence Street Br	12	13.48	13.90	9.80	16.70	4.35	-0.27	12	1.43	1.45	1.20	1.61	0.25	-0.20
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	9.03	9.15	7.90	11.40	1.35	0.85	12	3.41	3.35	3.20	4.10	0.25	1.63
Mangapu River at Otorohanga	12	21.60	23.00	16.00	26.00	5.95	-0.31	12	1.74	1.77	1.38	2.10	0.27	-0.09
Mangatutu Stm (Waikeria) at Walker Rd Br	12	3.18	3.25	2.70	3.60	0.55	-0.26	12	1.37	1.36	1.16	1.60	0.29	0.15
Mangauika Stm at Te Awamutu Borough W/S Intake	12	3.29	3.30	2.60	4.40	0.95	0.44	12	1.79	1.77	1.17	2.40	0.47	0.17
Ohote Stm at Whatawhata/Horotiu Rd	11	10.51	10.40	9.50	11.70	0.28	0.43	11	3.93	3.70	3.30	4.80	0.93	0.55
Puniu River at Bartons Corner Rd Br	12	3.68	3.60	3.30	4.10	0.50	0.28	12	1.63	1.62	1.41	1.89	0.13	0.48
Waipa River at Mangaokewa Rd	12	2.27	2.25	1.97	2.60	0.25	0.19	12	0.96	0.91	0.81	1.35	0.14	1.45
Waipa River at Pirongia-Ngutunui Rd Br	12	10.11	10.00	8.30	12.00	1.40	0.23	12	1.74	1.74	1.55	2.00	0.18	0.46
Waipa River at SH3 Otorohanga	12	4.56	4.55	3.50	5.80	0.85	0.14	12	1.42	1.43	1.08	1.65	0.19	-0.58
Waitomo Stm at SH31 Otorohanga	12	28.03	28.50	19.40	38.00	8.00	0.14	12	1.59	1.59	1.35	2.10	0.29	0.91
Waitomo Stm at Tumutumu Rd	12	27.75	28.00	21.00	35.00	6.00	-0.05	12	1.44	1.42	1.17	1.75	0.26	0.34
Tributaries to the upper Waikato River														
Kawaunui Stm at SH5 Br	12	6.65	6.50	4.90	8.20	1.25	-0.06	12	2.42	2.50	1.87	2.60	0.20	<u>-1.74</u>
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	3.57	3.50	3.30	3.90	0.30	0.62	12	1.73	1.77	1.45	1.90	0.20	-0.76
Mangakara Stm (Reporoa)	12	3.73	3.75	3.10	4.30	0.60	-0.16	12	1.61	1.69	1.24	1.84	0.28	-0.67
Mangakino Stm (Whakamaru) at Sandel Rd	12	3.47	3.45	2.60	4.00	0.55	-0.56	12	1.51	1.54	1.04	1.77	0.38	-0.58
Otamakokore Stm at Hossack Rd	12	5.94	5.95	4.60	7.10	1.80	-0.04	12	2.11	2.10	1.85	2.40	0.38	0.19
Pueto Stm at Broadlands Rd Br	11	5.85	5.80	5.50	6.40	0.45	0.47	11	2.93	2.90	2.70	3.20	0.20	0.28
Tahunaatara Stm at Ohakuri Rd	12	2.73	2.60	2.50	3.10	0.45	0.57	12	1.24	1.29	1.03	1.35	0.16	-0.77
Torepatutahi Stm at Vaile Rd Br	12	5.07	5.05	4.20	6.20	0.90	0.35	12	2.33	2.30	2.10	2.60	0.20	0.34
Waiotapu Stm at Campbell Rd Br	12	8.17	8.45	6.80	9.10	1.00	-0.72	12	2.40	2.50	1.97	2.70	0.45	-0.60
Waiotapu Stm at Homestead Rd Br	12	8.93	8.70	7.30	11.70	1.55	0.89	12	2.84	2.80	2.60	3.50	0.25	1.62
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	6.00	5.95	5.40	6.50	0.65	-0.05	12	2.04	2.10	1.86	2.20	0.19	-0.21
Whirinaki Stm at Campbell Rd Br	12	2.53	2.45	2.30	3.00	0.20	1.13	12	1.15	1.14	1.07	1.26	0.11	0.54
West Coast														
Awakino River at Gribbon Rd	12	4.08	3.95	3.50	4.80	0.75	0.24	12	1.24	1.24	1.09	1.39	0.17	0.08
Awakino River at SH3 Awakau Rd Junction	12	12.58	11.75	8.80	17.20	4.35	0.25	12	1.64	1.61	1.35	2.00	0.31	0.45
Manganui River at Off Manganui Rd	12	5.30	5.35	4.10	6.40	0.95	-0.27	12	1.77	1.77	1.60	1.95	0.09	0.48
Mangaotaki River at SH3 Br	12	17.51	18.00	13.10	20.00	2.65	-0.93	12	1.19	1.20	1.07	1.29	0.11	-0.24
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	17.58	18.20	12.50	21.00	5.65	-0.25	12	1.08	1.09	0.83	1.23	0.11	-0.97
Mokau River at Awakau Rd	12	13.54	13.30	8.50	21.00	5.15	0.39	12	1.73	1.73	1.44	2.10	0.26	0.17
Mokau River at Mangaokewa Rd (Off SH30)	12	3.18	3.25	2.70	3.50	0.55	-0.42	12	1.22	1.26	1.03	1.38	0.17	-0.42
Mokau River at Totoro Rd Recorder	12	13.18	13.55	9.50	17.30	2.35	0.11	12	1.50	1.51	1.33	1.63	0.13	-0.44
Mokauiti Stm at Three Way Point - Aria	12	7.98	7.85	6.40	9.70	1.55	0.18	12	1.94	1.86	1.67	2.40	0.28	1.00
Ohautira Stm at Waingaro Te Uku Rd	12	4.93	5.05	4.10	6.00	0.65	0.12	12	2.34	2.40	1.88	2.90	0.30	0.00
Oparau River at Langdon Rd (Off Okupata Rd)	12	3.57	3.40	2.20	5.40	1.25	0.46	12	1.83	1.73	1.07	2.70	0.60	0.30
Tawarau River at Off Speedies Rd	12	16.34	16.80	11.00	19.80	4.60	-0.53	12	1.04	1.08	0.77	1.13	0.09	<u>-1.86</u>
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	6.49	6.80	4.00	7.80	1.15	-1.21	12	2.35	2.30	1.49	2.90	0.40	-0.53
Waitetuna River at Te Uku-Waingaro Rd	12	4.12	4.00	3.50	5.10	0.60	0.81	12	1.81	1.84	1.50	2.20	0.24	0.38
Inflows to Lake Taupo														
Hinemaiaia River at SH1	12	3.22	3.25	2.30	3.80	0.35	-0.91	12	1.15	1.19	0.74	1.42	0.17	-0.83
Kuratau River at SH41 Moerangi	12	1.87	1.82	1.53	2.40	0.52	0.35	12	0.82	0.83	0.70	1.00	0.18	0.31
Kuratau River at Te Rae Street T10	12	4.78	4.45	3.10	7.50	1.70	0.79	12	1.93	1.68	1.21	3.40	1.00	0.95
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	5.75	5.75	5.30	6.30	0.25	0.35	12	3.08	3.10	2.80	3.40	0.25	0.16
Tauranga-Taupo River at Te Kono Slackline	11	3.59	3.60	2.60	4.40	0.45	-0.45	11	1.04	1.05	0.65	1.40	0.29	-0.19
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Cana	12	8.99	9.20	7.40	10.70	1.30	-0.27	12	3.96	4.00	2.80	5.00	0.90	-0.25
Tokaanu Stm at Off SH41 Turangi	12	6.92	6.85	6.50	7.20	0.35	-0.05	12	2.94	2.90	2.70	3.20	0.10	0.19
Waihaha River at SH32	12	2.34	2.35	1.76	2.90	0.45	-0.04	12	0.98	1.01	0.69	1.27	0.27	-0.05
Waitahanui River at Blake Rd	12	3.37	3.40	3.10	3.60	0.15	-0.25	12	1.45	1.44	1.29	1.59	0.16	-0.07
Whangamata Stm (Kinloch) at Whangamata Rd	12	4.43	4.50	4.20	4.60	0.20	-0.46	12	2.12	2.10	1.98	2.20	0.15	-0.36
Whanganui Stm at Lakeside Lake Taupo	12	3.36	3.30	2.30	4.60	0.85	0.31	12	1.46	1.48	0.98	2.00	0.45	0.20
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	4.82	4.80	4.20	5.30	0.40	-0.09	12	1.97	1.97	1.58	2.30	0.27	-0.31

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

Potassium - dissolved (g.m⁻³)

Location	Count	Mean	Median	Min	Max	IQR	Skew
Coromandel							
Hikutaia River at Old Maratoto Rd	12	1.19	1.16	1.07	1.41	0.17	0.77
Kauaeranga River at Smiths Cableway/Recorder	12	0.94	0.94	0.80	1.18	0.14	0.84
Ohinemuri River at Queens Head	12	2.74	2.80	2.20	3.70	0.60	0.61
Ohinemuri River at SH25 Br	12	1.59	1.59	1.43	1.91	0.18	0.92
Tairua River at Morrisons Br Hikuai	12	1.26	1.23	1.03	1.64	0.22	0.74
Tapu River at Tapu-Coroglen Rd	12	1.04	1.01	0.83	1.28	0.16	0.55
Waiau River at E309 Rd Ford	12	1.03	1.01	0.83	1.23	0.15	0.29
Waitekauri River at U/S Ohinemuri Conflu	12	1.40	1.34	1.14	1.81	0.20	0.90
Waiwawa River at SH25 Coroglen	12	0.94	0.90	0.81	1.17	0.17	0.76
Wharekawa River at SH25	12	1.63	1.62	1.38	2.10	0.14	1.21
Hauraki							
Mangawhero Stm (Kaihere) at Mangawara Rd	12	1.47	1.47	1.27	1.74	0.23	0.42
Oraka Stm at Lake Rd	12	6.44	5.15	4.10	13.90	3.10	1.43
Piako River at Kiwitahi	12	3.89	3.70	3.20	4.70	1.20	0.15
Piako River at Paeroa-Tahuna Rd Br	12	6.30	6.30	5.10	7.30	1.15	-0.06
Piakonui Stm at Piakonui Rd	12	1.24	1.27	0.94	1.53	0.36	-0.20
Waihou River at Okauia	12	4.60	4.40	3.90	6.50	0.45	1.61
Waihou River at Whites Rd	12	4.08	4.05	3.70	4.40	0.20	-0.28
Waiohotu Stm at Waiohotu Rd (Off SH5)	12	2.48	2.50	2.20	2.60	0.20	-0.77
Waiomou Stm at Matamata-Tauranga Rd	12	2.99	3.00	2.50	3.50	0.30	0.00
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	2.28	2.30	1.20	3.10	0.93	-0.35
Waitoa River at Landsdowne Rd Br	12	4.98	4.65	4.00	6.20	1.05	0.44
Waitoa River at Mellon Rd Recorder	12	6.32	6.20	5.50	7.10	1.10	0.06
Tributaries to the lower Waikato River							
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	2.48	2.25	0.95	5.30	1.50	0.93
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	4.98	5.35	2.60	7.20	2.25	-0.38
Karapiro Stm at Hickey Rd Bridge	12	2.73	2.75	2.10	3.40	0.75	-0.01
Kirikiroa Stm at Tauhara Dr	12	5.41	5.30	4.40	6.50	0.70	0.20
Komakorau Stm at Henry Rd	12	7.10	6.75	5.40	10.70	2.30	0.93
Little Waipa Stm at Arapuni - Putaruru Rd	12	4.39	4.10	3.70	6.40	0.50	<u>1.81</u>
Mangakotukutuku Stm (Rukuhia) at Peacocks Rd	12	6.07	6.00	4.80	8.10	0.95	0.78
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	4.91	5.00	3.70	5.60	0.60	-0.93
Mangaone Stm at Annebrooke Rd Br	12	6.44	6.45	5.50	8.10	0.80	0.68
Mangaonua Stm at Harbutt Road Bridge	12	1.54	1.52	1.23	1.84	0.31	-0.02
Mangaonua Stm at Hoeka Rd	12	3.90	3.95	3.40	4.60	0.45	0.16
Mangatangi River at SH2 Maramarua	12	2.09	2.10	1.35	3.10	0.87	0.30
Mangatawhiri River at Lyons Rd At Buckingham Br	12	1.55	1.62	1.31	1.78	0.31	-0.15
Mangawara Stm at Rutherford Rd Br	12	5.18	4.95	3.70	6.70	1.95	0.10
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	11	6.47	6.30	4.80	9.00	1.40	0.61
Matahuru Stm at Waiterimu Road Below Confluence	12	2.39	2.40	1.32	3.20	0.95	-0.37
Ohaeroa Stm at SH22 Br	12	1.45	1.39	0.90	3.00	0.31	<u>2.04</u>
Opuatia Stm at Ponganui Rd	11	1.29	1.23	0.95	2.20	0.29	1.62
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	3.98	3.90	3.30	5.00	0.45	0.97
Waerenga Stm at Taniwha Rd	12	1.53	1.50	1.18	2.10	0.22	1.12
Waitawhiriwhiri Stm at Edgecumbe Street	12	5.07	5.10	4.50	5.80	0.65	0.42
Whakapipi Stm at SH22 Br	12	2.11	2.10	1.46	3.00	0.62	0.38
Whakauru Stm at U/S SH1 Br	12	3.59	3.55	3.20	4.20	0.40	0.67
Whangamarino River at Island Block Rd	12	3.19	3.40	2.10	4.40	0.80	-0.15
Whangamarino River at Jefferies Rd Br	12	2.40	2.30	1.20	4.10	1.28	0.32
Whangape Stm at Rangiriri-Glen Murray Rd	12	2.36	2.40	1.67	3.10	0.60	-0.01

Sodium - dissolved (g.m⁻³)

Count	Mean	Median	Min	Max	IQR	Skew
Coromandel						
12	8.0	8.0	6.5	9.6	0.4	0.28
12	7.4	7.5	5.3	9.1	0.6	-0.57
12	11.6	10.5	6.5	19.2	4.0	0.87
12	7.9	7.8	6.8	9.4	0.7	0.63
12	7.1	7.1	5.6	8.7	0.7	0.15
12	9.4	9.4	8.2	11.3	0.7	0.62
12	10.0	10.2	8.4	11.7	0.8	-0.15
12	7.4	7.5	6.1	9.3	0.8	0.37
12	6.9	7.0	5.2	8.5	0.6	-0.12
12	9.1	9.0	7.9	11.0	0.8	0.77
Hauraki						
12	13.3	13.4	11.3	14.6	1.4	-0.56
12	12.2	10.9	7.3	22.0	3.2	1.50
12	11.5	11.7	9.9	12.8	1.6	-0.41
12	18.0	16.9	13.0	30.0	5.8	1.21
12	8.8	8.5	7.8	10.6	1.0	0.93
12	10.5	10.1	7.7	13.8	1.5	0.49
12	8.9	8.9	8.4	9.3	0.4	-0.35
12	6.9	7.2	4.9	7.8	1.2	-0.95
12	7.7	7.9	5.6	8.5	0.8	-1.39
12	17.1	17.8	10.8	21.0	4.7	-0.60
12	11.4	11.8	9.4	13.3	2.6	-0.26
12	23.9	23.0	12.4	41.0	10.7	0.53
Tributaries to the lower Waikato River						
12	25.8	26.5	16.5	29.0	2.0	<u>-2.11</u>
12	74.1	76.0	30.0	147.0	46.5	0.47
12	12.0	12.2	9.3	15.0	3.0	-0.15
12	17.0	17.4	13.1	19.6	2.3	-0.68
12	15.0	15.9	11.0	17.3	3.4	-0.91
12	9.4	9.6	7.0	10.3	1.1	-1.44
12	13.0	13.4	9.7	18.7	2.9	0.62
12	13.0	13.8	8.4	15.6	2.7	-1.00
12	24.2	25.0	20.0	28.0	3.0	-0.49
12	10.0	10.1	8.5	11.3	1.5	-0.26
12	15.8	15.9	13.6	17.8	2.5	-0.36
12	12.8	13.5	8.3	15.9	2.8	-0.73
12	12.8	13.3	9.2	15.8	2.5	-0.45
12	16.3	17.1	8.5	21.0	4.6	-0.77
11	14.0	14.7	9.8	16.2	2.8	-0.95
12	14.0	14.4	8.5	17.3	3.0	-0.84
12	14.5	14.0	12.1	18.0	2.6	0.46
11	14.2	13.6	12.4	16.9	2.0	0.68
12	10.6	10.9	6.8	11.9	1.0	<u>-1.99</u>
12	13.9	13.9	10.9	16.8	1.8	-0.29
12	14.7	15.2	11.4	16.7	2.2	-0.74
12	15.4	15.6	10.2	20.0	2.9	-0.24
12	7.2	7.4	6.0	7.6	0.5	-1.61
12	15.5	15.8	11.8	17.9	2.0	-0.75
12	15.7	16.1	8.6	19.0	2.9	-1.22
12	14.7	14.2	11.0	22.0	4.1	0.92

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

Waipa River and Tributaries

Kaniwhaniwha Stm at Wright Rd	12	1.24	1.17	0.90	2.20	0.22	<u>2.09</u>
Mangaohoi Stm at South Branch Maru Rd	12	1.67	1.73	1.18	2.10	0.37	-0.28
Mangaokewa Stm at Lawrence Street Br	12	2.18	2.05	1.46	3.80	0.28	1.62
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	4.74	4.60	3.70	6.20	0.60	0.42
Mangapu River at Otorohanga	12	2.05	1.91	1.46	3.30	0.49	1.24
Mangatutu Stm (Waikeria) at Walker Rd Br	12	1.65	1.55	1.32	2.10	0.41	0.37
Mangauika Stm at Te Awamutu Borough W/S Intake	12	0.73	0.72	0.62	0.83	0.04	-0.06
Ohote Stm at Whatawhata/Horotiu Rd	11	4.01	4.10	3.30	4.70	0.38	-0.11
Puniu River at Bartons Corner Rd Br	12	2.43	2.45	1.98	2.80	0.60	-0.15
Waipa River at Mangaokewa Rd	12	1.73	1.64	1.41	2.30	0.23	1.14
Waipa River at Pirongia-Ngutunui Rd Br	12	2.06	2.10	1.77	2.30	0.24	-0.38
Waipa River at SH3 Otorohanga	12	1.83	1.88	1.44	2.20	0.40	-0.27
Waitomo Stm at SH31 Otorohanga	12	0.99	0.97	0.64	1.43	0.42	0.26
Waitomo Stm at Tumutumu Rd	12	0.81	0.78	0.63	1.12	0.17	0.82

	12	7.9	8.0	6.0	9.2	1.1	-0.41
	12	7.3	7.6	5.9	8.2	1.1	-0.67
	12	11.5	12.2	5.3	17.1	3.7	-0.21
	12	17.6	14.5	10.1	38.0	9.1	1.37
	12	9.2	9.2	5.2	13.6	2.6	0.15
	12	6.6	6.9	5.3	8.0	1.2	-0.13
	12	5.3	5.3	4.5	6.1	0.6	0.04
	11	13.1	13.3	9.7	16.6	3.7	0.08
	12	7.9	8.2	5.9	9.7	1.7	-0.48
	12	5.1	5.1	3.5	6.7	0.8	0.01
	12	8.4	8.5	6.7	10.6	1.7	0.32
	12	7.7	7.8	4.8	10.3	1.2	-0.10
	12	6.3	6.2	5.0	7.0	0.6	-0.80
	12	5.8	5.8	5.0	6.5	0.6	0.06

Tributaries to the upper Waikato River

Kawaunui Stm at SH5 Br	12	6.13	5.70	5.10	9.50	1.00	<u>1.93</u>
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	3.61	3.50	3.20	4.70	0.25	<u>2.03</u>
Mangakara Stm (Reporoa)	12	2.93	2.85	2.70	3.70	0.35	<u>1.73</u>
Mangakino Stm (Whakamaru) at Sandel Rd	12	2.08	2.10	1.86	2.30	0.20	-0.13
Otamakokore Stm at Hossack Rd	12	5.82	5.65	5.00	7.80	0.95	1.21
Pueto Stm at Broadlands Rd Br	11	1.82	1.82	1.65	2.00	0.11	0.06
Tahunaatara Stm at Ohakuri Rd	12	3.17	3.00	2.80	4.80	0.25	<u>2.33</u>
Torepatutahi Stm at Vaile Rd Br	12	3.28	3.10	2.80	4.60	0.50	1.49
Waiotapu Stm at Campbell Rd Br	12	13.16	13.35	10.30	15.20	2.95	-0.38
Waiotapu Stm at Homestead Rd Br	12	8.88	8.90	7.40	10.40	0.80	0.04
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	5.86	5.85	5.40	6.30	0.30	-0.09
Whirinaki Stm at Campbell Rd Br	12	2.52	2.40	2.30	3.50	0.10	<u>2.64</u>

	12	10.5	11.0	5.6	12.6	2.2	-1.38
	12	9.3	9.6	6.4	10.3	1.1	-1.67
	12	10.4	11.0	7.3	11.7	1.8	-1.09
	12	5.8	5.9	4.2	6.7	1.0	-0.70
	12	58.5	60.5	30.0	71.0	17.5	-0.94
	11	12.5	12.6	12.0	13.5	0.4	1.02
	12	8.5	8.8	5.5	9.7	1.3	-1.27
	12	10.6	10.6	9.7	11.2	0.3	-0.63
	12	88.0	92.0	60.0	110.0	27.0	-0.39
	12	54.6	57.5	35.0	68.0	22.0	-0.44
	12	57.5	59.0	44.0	66.0	8.0	-0.80
	12	7.6	7.6	7.3	7.9	0.2	0.10

West Coast

Awakino River at Gribbon Rd	12	0.52	0.51	0.47	0.62	0.05	1.07
Awakino River at SH3 Awakau Rd Junction	12	0.74	0.73	0.67	0.89	0.11	0.78
Manganui River at Off Manganui Rd	12	0.87	0.89	0.70	1.08	0.12	0.42
Mangaotaki River at SH3 Br	12	0.79	0.79	0.59	1.01	0.15	0.13
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	0.72	0.71	0.58	0.98	0.05	1.32
Mokau River at Awakau Rd	12	1.27	1.30	0.99	1.52	0.18	-0.32
Mokau River at Mangaokewa Rd (Off SH30)	12	2.29	2.25	1.53	3.70	0.30	1.32
Mokau River at Totoro Rd Recorder	12	1.29	1.28	1.02	1.74	0.19	0.79
Mokaiti Stm at Three Way Point - Aria	12	1.43	1.40	1.12	2.00	0.33	0.84
Ohautira Stm at Waingaro Te Uku Rd	12	1.85	1.79	1.54	2.30	0.34	0.72
Oparau River at Langdon Rd (Off Okupata Rd)	12	0.95	0.93	0.83	1.22	0.16	1.01
Tawarau River at Off Speedies Rd	12	0.70	0.70	0.58	0.87	0.07	0.75
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	1.62	1.62	1.19	2.30	0.26	0.79
Waitetuna River at Te Uku-Waingaro Rd	12	1.53	1.51	1.27	2.20	0.21	1.65

	12	6.7	6.9	4.9	7.4	0.5	-1.55
	12	9.8	9.2	5.5	15.3	3.3	0.50
	12	11.1	11.3	7.2	13.3	0.8	-1.23
	12	6.2	6.3	4.6	6.9	0.8	-1.26
	12	6.4	6.4	5.5	7.2	0.6	-0.36
	12	8.8	8.8	5.0	12.6	2.0	-0.07
	12	6.3	6.5	4.1	7.9	0.9	-0.72
	12	7.0	7.1	4.8	8.9	0.7	-0.36
	12	7.9	7.9	5.6	9.9	0.9	-0.31
	12	15.1	15.1	13.7	17.6	1.6	0.68
	12	8.6	8.8	5.9	10.2	1.4	-0.79
	12	6.2	6.3	5.3	6.9	0.6	-0.48
	12	15.0	14.7	10.1	19.5	2.6	0.09
	12	11.2	11.1	10.5	13.0	1.1	1.19

Inflows to Lake Taupo

Hinemaiaia River at SH1	12	1.30	1.32	1.02	1.42	0.08	<u>-1.82</u>
Kuratau River at SH41 Moerangi	12	1.31	1.25	0.96	1.80	0.45	0.36
Kuratau River at Te Rae Street T10	12	2.03	1.94	1.56	2.60	0.41	0.48
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	1.22	1.26	0.96	1.56	0.31	0.24
Tauranga-Taupo River at Te Kono Slackline	11	1.08	1.10	0.66	1.36	0.24	-0.60
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Cana	12	1.78	1.80	1.41	2.20	0.27	0.14
Tokaanu Stm at Off SH41 Turangi	12	2.47	2.40	2.40	2.70	0.10	1.30
Waihaha River at SH32	12	1.26	1.26	1.03	1.48	0.21	-0.10
Waitahanui River at Blake Rd	12	1.65	1.65	1.55	1.80	0.09	0.59
Whangamata Stm (Kinloch) at Whangamata Rd	12	2.23	2.30	2.00	2.40	0.15	-0.69
Whanganui Stm at Lakeside Lake Taupo	12	1.48	1.50	1.15	1.82	0.31	-0.02
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	2.14	2.15	1.79	2.40	0.20	-0.49

	12	6.1	6.5	3.9	7.5	1.2	-0.81
	12	4.4	4.3	3.7	5.3	1.0	0.36
	12	5.7	5.4	3.8	7.8	1.9	0.58
	12	14.4	14.4	13.6	15.1	0.6	-0.21
	11	4.3	4.3	2.8	5.7	1.0	-0.03
	12	6.7	6.8	5.2	8.4	1.3	-0.04
	12	7.4	7.4	7.1	8.4	0.3	<u>1.91</u>
	12	4.8	4.9	3.8	5.8	0.9	0.01
	12	8.7	8.7	7.8	9.5	0.4	-0.11
	12	8.5	8.6	8.1	8.9	0.5	0.04
	12	4.7	4.6	3.7	5.9	0.8	0.41
	12	6.3	6.3	5.4	7.1	0.6	0.21

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

Alkalinity (units: g.m⁻³ CaCO₃)

Location	Count	Mean	Median	Min	Max	IQR	Skew
Coromandel							
Hikutaia River at Old Maratoto Rd	12	18	18	12	24	5	0.06
Kauaeranga River at Smiths Cableway/Recorder	12	13	13	7	17	4	-0.32
Ohinemuri River at Queens Head	12	15	14	10	25	5	1.15
Ohinemuri River at SH25 Br	12	13	12	9	18	6	0.41
Tairua River at Morrisons Br Hikuai	12	12	12	8	15	3	-0.33
Tapu River at Tapu-Coroglen Rd	12	26	26	19	38	9	0.59
Waiau River at E309 Rd Ford	12	18	18	12	26	7	0.26
Waitekauri River at U/S Ohinemuri Conflu	12	15	15	11	24	5	0.86
Waiwawa River at SH25 Coroglen	12	13	13	8	18	4	-0.09
Wharekawa River at SH25	12	13	12	9	17	4	0.24
Hauraki							
Mangawhero Stm (Kaihere) at Mangawara Rd	12	24	25	13	30	10	-0.71
Oraka Stm at Lake Rd	12	29	27	14	46	9	0.37
Piako River at Kiwitahi	12	34	33	18	56	22	0.36
Piako River at Paeroa-Tahuna Rd Br	12	34	32	20	63	16	0.99
Piakonui Stm at Piakonui Rd	12	17	16	10	26	8	0.54
Waihou River at Okauia	12	26	27	16	32	5	-1.18
Waihou River at Whites Rd	12	27	27	25	30	1	1.33
Waiohotu Stm at Waiohotu Rd (Off SH5)	12	17	17	12	23	3	-0.05
Waiomou Stm at Matamata-Tauranga Rd	12	17	17	9	22	3	-0.91
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	32	34	14	48	13	-0.49
Waitoa River at Landsdowne Rd Br	12	29	28	20	40	11	0.16
Waitoa River at Mellon Rd Recorder	12	41	38	21	82	23	0.96
Tributaries to the lower Waikato River							
Awaroa River (Waiuku) at Otaua Rd Br opp Moseley Rd	12	34	32	20	48	14	0.29
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	179	179	78	340	104	0.41
Karapiro Stm at Hickey Rd Bridge	12	32	30	18	54	20	0.45
Kirikiroa Stm at Tauhara Dr	12	43	44	27	55	18	-0.43
Komakorau Stm at Henry Rd	12	15	15	11	20	4	0.32
Little Waipa Stm at Arapuni - Putaruru Rd	12	27	28	18	34	4	-0.47
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	12	30	31	16	45	18	0.00
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	34	34	23	42	6	-0.72
Mangaone Stm at Annebrooke Rd Br	12	53	56	43	58	9	-0.78
Mangaonua Stm at Harbutt Road Bridge	12	21	20	12	36	13	0.47
Mangaonua Stm at Hoeka Rd	12	30	31	23	34	5	-0.67
Mangatangi River at SH2 Maramarua	12	25	27	17	32	9	-0.45
Mangatawhiri River at Lyons Rd At Buckingham Br	12	27	28	15	36	9	-0.57
Mangawara Stm at Rutherford Rd Br	12	25	27	15	32	7	-0.72
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	11	29	31	14	38	15	-0.72
Matahuru Stm at Waiterimu Road Below Confluence	12	26	27	15	40	9	0.01
Ohaeroa Stm at SH22 Br	12	39	41	25	54	19	-0.10
Opuatia Stm at Ponganui Rd	11	40	40	25	48	7	-1.00
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	28	29	17	36	2	-1.00
Waerenga Stm at Taniwha Rd	12	24	26	12	31	8	-0.89
Waitawhiriwhiri Stm at Edgecumbe Street	12	44	44	31	58	20	0.12
Whakapipi Stm at SH22 Br	12	35	34	21	52	17	0.23
Whakauru Stm at U/S SH1 Br	12	25	25	18	32	2	0.03
Whangamarino River at Island Block Rd	12	30	31	20	43	9	0.02
Whangamarino River at Jefferies Rd Br	12	30	30	18	44	10	0.00
Whangape Stm at Rangiriri-Glen Murray Rd	12	38	36	30	52	11	0.74

Bicarbonate (g.m⁻³ HCO₃)

Count	Mean	Median	Min	Max	IQR	Skew
Coromandel						
12	22	22	15	29	6	0.02
12	16	16	9	21	5	-0.36
12	18	16	13	30	6	1.14
12	15	14	11	21	7	0.37
12	14	15	9	18	4	-0.31
12	32	31	23	45	10	0.48
12	22	22	14	31	9	0.19
12	19	18	13	29	6	0.83
12	16	16	10	22	5	-0.09
12	15	15	11	21	5	0.25
Hauraki						
12	29	31	16	36	12	-0.76
12	35	33	16	56	11	0.35
12	42	40	22	69	26	0.41
12	41	39	24	76	19	0.99
12	20	19	12	32	10	0.57
12	32	32	19	38	6	-1.32
12	33	33	30	37	1	1.30
12	21	21	15	28	3	0.03
12	20	21	11	27	3	-0.81
12	39	42	17	58	15	-0.54
12	36	34	25	49	14	0.20
12	50	46	26	100	27	0.98
Tributaries to the lower Waikato River						
12	41	39	24	59	18	0.27
12	218	220	95	410	124	0.37
12	39	37	22	66	25	0.44
12	52	54	33	67	23	-0.44
12	18	18	13	25	5	0.47
12	33	33	22	41	5	-0.61
12	37	38	20	55	23	0.02
12	41	42	28	51	7	-0.79
12	64	68	53	71	11	-0.80
12	26	25	15	44	15	0.49
12	36	38	28	41	6	-0.72
12	30	32	20	38	11	-0.49
12	32	35	19	43	12	-0.65
12	30	33	18	38	9	-0.75
11	35	38	17	46	17	-0.77
12	32	33	18	48	11	-0.01
12	48	50	31	65	23	-0.10
11	49	48	31	58	9	-0.96
12	34	35	21	44	3	-1.04
12	29	31	14	37	10	-0.88
12	54	54	38	71	25	0.12
12	42	41	26	64	20	0.29
12	31	31	22	39	3	-0.13
12	37	37	24	53	11	0.12
12	37	36	22	53	12	-0.01
12	46	43	36	63	14	0.74

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

Waipa River and Tributaries														
Kaniwhaniwha Stm at Wright Rd	12	22	23	14	31	7	0.08	12	27	27	17	37	9	0.02
Mangaohoi Stm at South Branch Maru Rd	12	19	19	11	26	9	-0.03	12	23	23	13	32	10	-0.06
Mangaokewa Stm at Lawrence Street Br	12	35	37	26	42	8	-0.58	12	43	45	32	51	10	-0.52
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	34	27	20	74	19	1.36	12	41	33	24	90	23	1.40
Mangapu River at Otorohanga	12	56	56	42	70	16	-0.09	12	68	69	51	84	20	-0.15
Mangatutu Stm (Waikeria) at Walker Rd Br	12	16	15	12	21	5	0.31	12	19	19	14	26	5	0.44
Mangauika Stm at Te Awamutu Borough W/S Intake	12	18	19	11	22	6	-0.60	12	22	24	13	27	8	-0.59
Ohote Stm at Whatawhata/Horotiu Rd	11	29	26	15	52	19	0.72	11	35	32	18	63	24	0.72
Puniu River at Bartons Corner Rd Br	12	19	19	14	25	5	0.24	12	23	23	17	30	5	0.18
Waipa River at Mangaokewa Rd	12	15	15	11	19	4	-0.17	12	18	18	13	23	4	-0.12
Waipa River at Pirongia-Ngutunui Rd Br	12	31	31	25	36	7	-0.01	12	37	37	30	44	8	-0.02
Waipa River at SH3 Otorohanga	12	17	18	13	21	5	-0.16	12	21	22	16	26	6	-0.03
Waitomo Stm at SH31 Otorohanga	12	74	75	52	97	28	-0.01	12	90	91	63	117	34	-0.04
Waitomo Stm at Tumutumu Rd	12	73	74	54	89	26	-0.24	12	89	90	66	108	29	-0.24
Tributaries to the upper Waikato River														
Kawaunui Stm at SH5 Br	12	26	27	16	35	9	-0.24	12	32	33	19	42	11	-0.33
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	29	30	20	38	4	-0.32	12	35	36	24	46	4	-0.35
Mangakara Stm (Reporoa)	12	23	23	16	30	5	-0.10	12	28	28	19	37	6	0.02
Mangakino Stm (Whakamaru) at Sandel Rd	12	23	23	13	33	7	0.11	12	27	27	16	40	9	0.15
Otamakokore Stm at Hossack Rd	12	94	97	51	110	23	-1.10	12	113	117	62	133	27	-1.11
Pueto Stm at Broadlands Rd Br	11	46	45	43	53	1	<u>2.18</u>	11	56	55	53	64	1	<u>2.26</u>
Tahunaatara Stm at Ohakuri Rd	12	23	23	13	32	5	-0.30	12	28	28	16	39	5	-0.24
Torepatutahi Stm at Vaile Rd Br	12	35	35	30	42	2	0.86	12	43	43	36	51	2	0.47
Waiotapu Stm at Campbell Rd Br	12	4	4	1	6	3	-0.47	12	5	5	1	7	4	-0.51
Waiotapu Stm at Homestead Rd Br	12	27	31	4	40	7	-1.29	12	33	38	5	48	9	-1.35
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	44	44	35	52	4	-0.31	12	54	54	43	64	5	-0.21
Whirinaki Stm at Campbell Rd Br	12	19	19	17	28	1	<u>2.72</u>	12	24	23	21	33	1	<u>2.68</u>
West Coast														
Awakino River at Gribbon Rd	12	17	18	14	19	3	-0.52	12	21	22	17	23	3	-0.49
Awakino River at SH3 Awakau Rd Junction	12	33	33	24	42	11	0.05	12	40	40	29	50	13	-0.04
Manganui River at Off Manganui Rd	12	20	20	17	22	2	-0.12	12	24	24	21	27	2	-0.14
Mangaotaki River at SH3 Br	12	48	49	35	55	8	-0.77	12	58	59	42	66	10	-0.89
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	49	50	32	66	18	-0.01	12	59	60	39	79	21	-0.01
Mokau River at Awakau Rd	12	37	36	25	49	12	-0.16	12	45	44	30	60	14	-0.14
Mokau River at Mangaokewa Rd (Off SH30)	12	18	17	13	21	5	-0.20	12	22	21	16	26	6	-0.08
Mokau River at Totoro Rd Recorder	12	39	39	26	50	10	-0.24	12	47	47	31	60	12	-0.31
Mokauiti Stm at Three Way Point - Aria	12	28	27	19	39	10	0.40	12	34	33	23	48	11	0.47
Ohautira Stm at Waingaro Te Uku Rd	12	24	24	15	32	8	0.00	12	29	30	19	38	10	-0.16
Oparau River at Langdon Rd (Off Okupata Rd)	12	19	20	8	27	9	-0.36	12	23	24	10	32	11	-0.38
Tawarau River at Off Speedies Rd	12	46	48	30	58	16	-0.37	12	56	58	37	71	19	-0.32
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	28	28	15	39	15	-0.10	12	34	35	19	48	18	-0.12
Waitetuna River at Te Uku-Waingaro Rd	12	21	21	15	26	6	0.02	12	25	25	19	31	7	-0.04
Inflows to Lake Taupo														
Hinemaiaia River at SH1	12	25	24	14	36	6	0.12	12	30	29	16	43	7	0.06
Kuratau River at SH41 Moerangi	12	14	14	9	19	5	-0.05	12	17	17	11	23	6	-0.04
Kuratau River at Te Rae Street T10	12	27	27	16	41	14	0.32	12	33	32	19	50	16	0.39
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	40	39	38	46	3	1.05	12	49	48	46	55	4	0.93
Tauranga-Taupo River at Te Kono Slackline	11	22	21	15	31	7	0.47	11	26	25	18	38	8	0.54
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Can	12	37	37	29	45	7	0.29	12	44	44	35	55	9	0.29
Tokaanu Stm at Off SH41 Turangi	12	41	41	40	47	2	<u>2.31</u>	12	50	50	48	57	2	<u>2.09</u>
Waihaha River at SH32	12	18	18	11	27	6	0.40	12	22	21	13	33	7	0.39
Waitahanui River at Blake Rd	12	30	29	25	38	2	1.28	12	36	36	30	47	2	1.32
Whangamata Stm (Kinloch) at Whangamata Rd	12	29	28	27	37	1	<u>2.69</u>	12	35	34	33	45	1	<u>2.67</u>
Whanganui Stm at Lakeside Lake Taupo	12	22	20	13	31	8	0.11	12	27	25	16	38	10	0.09
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	28	27	21	38	6	0.80	12	34	33	26	46	7	0.79

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

Chloride (g.m⁻³)

Location	Count	Mean	Median	Min	Max	IQR	Skew
Coromandel							
Hikutaia River at Old Maratoto Rd	12	10.2	10.3	9.0	10.9	0.4	-1.16
Kauaeranga River at Smiths Cableway/Recorder	12	9.4	9.6	7.1	10.1	0.4	<u>-2.46</u>
Ohinemuri River at Queens Head	12	14.6	14.6	10.2	17.1	1.9	-1.21
Ohinemuri River at SH25 Br	12	11.2	11.3	10.4	11.7	0.4	-0.75
Tairua River at Morrisons Br Hikuai	12	9.4	9.6	8.1	10.3	0.6	-0.84
Tapu River at Tapu-Coroglen Rd	12	11.7	11.9	9.9	12.2	0.7	<u>-1.95</u>
Waiau River at E309 Rd Ford	12	13.7	14.1	11.9	14.5	0.7	-1.37
Waitekauri River at U/S Ohinemuri Conflu	12	9.5	9.5	8.8	9.9	0.3	-0.93
Waiwawa River at SH25 Coroglen	12	9.1	9.3	7.3	10.1	0.6	-1.30
Wharekawa River at SH25	12	12.5	12.6	11.7	13.0	0.3	-1.17
Hauraki							
Mangawhero Stm (Kaihere) at Mangawara Rd	12	15.9	15.9	14.8	17.5	0.7	0.56
Oraka Stm at Lake Rd	12	11.7	10.0	7.6	24.0	3.9	<u>1.77</u>
Piako River at KIWITAH	12	13.9	13.9	12.7	15.5	1.7	0.20
Piako River at Paeroa-Tahuna Rd Br	12	21.4	21.5	18.8	24.0	2.7	0.07
Piakonui Stm at Piakonui Rd	12	10.2	10.0	9.2	11.7	1.2	0.59
Waihou River at Okauia	12	9.1	8.7	7.9	11.0	1.6	0.57
Waihou River at Whites Rd	12	5.8	5.8	5.4	6.1	0.4	-0.28
Waiohotu Stm at Waiohotu Rd (Off SH5)	12	5.3	5.4	4.5	6.0	0.6	-0.29
Waiomou Stm at Matamata-Tauranga Rd	12	7.7	7.5	6.6	9.1	0.9	0.75
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	20.1	20.0	15.9	23.0	2.9	-0.59
Waitoa River at Landsdowne Rd Br	12	15.2	15.3	12.6	17.8	2.4	-0.05
Waitoa River at Mellon Rd Recorder	12	25.5	26.5	18.4	32.0	7.0	-0.24
Tributaries to the lower Waikato River							
Awaroa River (Waiuku) at Otua Rd Br opp Moseley Rd	12	39.1	40.5	25.0	44.0	3.5	<u>-2.02</u>
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	15.6	15.5	12.6	17.9	2.8	-0.14
Karapiro Stm at Hickey Rd Bridge	12	12.4	12.4	11.0	14.1	1.9	0.20
Kirikiroa Stm at Tauhara Dr	12	20.9	21.0	19.0	22.0	0.0	-1.00
Komakorau Stm at Henry Rd	12	28.8	30.0	21.0	33.0	4.0	-1.10
Little Waipa Stm at Arapuni - Putaruru Rd	12	8.6	8.6	6.9	10.0	0.7	-0.34
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	12	20.2	19.9	15.4	26.0	2.6	0.34
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	10.2	10.6	6.7	11.5	0.4	-1.64
Mangaone Stm at Annebrooke Rd Br	12	22.4	23.0	21.0	23.0	1.0	-0.86
Mangaonua Stm at Harbutt Road Bridge	12	12.5	12.6	11.5	13.7	1.1	0.07
Mangaonua Stm at Hoeka Rd	12	20.1	20.5	17.3	22.0	2.7	-0.45
Mangatangi River at SH2 Maramarua	12	17.7	18.2	12.4	20.0	3.4	-0.98
Mangatawhiri River at Lyons Rd At Buckingham Br	12	16.4	16.8	12.4	18.2	1.4	-1.27
Mangawara Stm at Rutherford Rd Br	12	26.0	28.0	13.5	31.0	5.0	-1.40
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	11	22.9	23.0	18.0	25.0	1.8	<u>-1.70</u>
Matahuru Stm at Waiterimu Road Below Confluence	12	15.8	16.3	10.2	19.3	1.7	-0.94
Ohaeroa Stm at SH22 Br	12	18.9	18.3	17.1	26.0	1.1	<u>2.59</u>
Opuatia Stm at Ponganui Rd	11	19.5	19.6	17.6	23.0	1.1	1.00
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	8.6	8.7	6.2	9.7	0.5	<u>-1.92</u>
Waerenga Stm at Taniwha Rd	12	14.5	14.7	13.0	15.7	0.7	-0.48
Waitawhiriwhiri Stm at Edgecumbe Street	12	17.0	17.4	14.6	18.1	1.1	-1.27
Whakapipi Stm at SH22 Br	12	20.6	21.5	14.7	24.0	1.6	-1.28
Whakauru Stm at U/S SH1 Br	12	5.5	5.4	5.2	5.8	0.3	0.28
Whangamarino River at Island Block Rd	12	20.5	21.0	16.6	24.0	3.1	-0.49
Whangamarino River at Jefferies Rd Br	12	18.3	18.3	10.8	22.0	1.9	-1.56
Whangape Stm at Rangiriri-Glen Murray Rd	12	20.3	19.7	15.3	28.0	4.9	0.64

Sulphate (g.m⁻³)

Count	Mean	Median	Min	Max	IQR	Skew
12	5.2	5.3	4.0	5.8	0.8	-0.91
12	9.7	9.8	4.7	12.8	2.9	-0.73
12	61.5	45.5	13.7	108.0	78.5	0.16
12	4.1	4.1	3.7	4.7	0.4	0.59
12	2.4	2.4	2.0	2.6	0.3	-0.34
12	5.7	5.9	3.9	6.3	0.7	-1.51
12	4.0	4.0	3.6	4.3	0.3	-0.21
12	21.0	19.4	9.7	44.0	13.8	0.94
12	4.5	4.8	2.8	5.1	0.8	-1.43
12	2.6	2.6	2.2	2.8	0.2	-1.12
12	3.7	3.7	3.4	3.9	0.3	-0.05
12	4.1	4.3	2.9	5.5	1.2	0.14
12	8.0	8.7	1.6	12.8	4.5	-0.57
12	25.4	25.5	17.6	31.0	3.5	-0.63
12	1.8	1.9	1.3	2.1	0.4	-0.68
12	4.2	4.0	2.9	6.1	1.8	0.41
12	1.6	1.6	1.4	2.0	0.3	0.49
12	1.2	1.2	0.8	1.5	0.3	0.01
12	3.0	3.0	2.0	4.7	1.6	0.36
12	19.7	16.8	9.2	37.0	10.0	0.90
12	14.6	14.3	10.7	20.0	3.5	0.53
12	28.9	29.5	20.0	36.0	8.5	-0.30
12	28.7	18.2	6.8	69.0	39.9	0.65
12	146.0	152.0	79.0	210.0	84.0	-0.29
12	11.1	8.5	4.5	27.0	8.2	1.36
12	24.1	22.0	17.0	34.0	10.1	0.42
12	47.1	46.0	34.0	68.0	11.5	0.64
12	2.4	2.1	1.6	4.0	1.0	1.01
12	19.4	17.9	14.2	27.0	6.4	0.53
12	5.9	6.2	3.8	6.6	0.7	-1.39
12	32.1	30.5	29.0	38.0	5.5	0.60
12	3.0	3.0	2.1	4.3	1.2	0.46
12	27.3	27.5	21.0	33.0	5.5	-0.13
12	5.8	5.2	2.5	10.3	4.1	0.57
12	4.5	4.1	2.8	6.9	2.3	0.52
12	28.7	24.0	18.9	51.0	10.0	1.20
11	27.6	27.0	24.0	36.0	4.8	0.91
12	9.1	8.7	3.2	15.6	8.3	0.15
12	4.5	4.5	3.0	6.0	1.7	-0.09
11	8.4	8.7	4.5	12.1	3.7	-0.16
12	3.0	3.1	2.1	3.8	0.5	-0.46
12	6.3	6.1	4.0	9.6	2.3	0.53
12	20.9	19.7	15.6	29.0	7.0	0.39
12	6.7	6.8	3.9	10.3	3.4	0.03
12	0.8	0.7	0.3	2.3	0.3	<u>2.08</u>
12	12.1	10.9	4.1	23.0	9.9	0.44
12	9.6	8.8	3.4	16.9	8.2	0.17
12	21.4	20.7	12.4	29.0	8.4	-0.04

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

Waipa River and Tributaries															
Kaniwhaniwha Stm at Wright Rd	12	12.2	12.5	9.3	14.1	2.0	-0.71	12	3.4	3.7	1.9	4.5	1.7	-0.28	
Mangaohoi Stm at South Branch Maru Rd	12	9.1	9.1	8.2	9.8	0.5	-0.43	12	2.9	2.8	2.2	4.5	0.5	1.65	
Mangaokewa Stm at Lawrence Street Br	12	20.7	22.5	10.8	31.0	8.4	-0.19	12	3.4	3.7	0.3	5.0	1.4	-1.19	
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	15.2	15.4	13.6	17.5	0.7	0.37	12	19.3	19.7	15.4	23.0	4.0	-0.16	
Mangapu River at Otorohanga	12	14.5	13.7	9.3	23.0	4.3	0.60	12	8.1	8.3	5.7	10.9	1.8	0.11	
Mangatutu Stm (Waikeria) at Walker Rd Br	12	7.7	7.8	6.3	8.6	1.4	-0.40	12	2.7	2.8	1.6	3.4	0.6	-0.82	
Mangauika Stm at Te Awamutu Borough W/S Intake	12	7.8	7.7	6.8	9.8	0.9	1.21	12	1.6	1.5	1.2	1.9	0.3	0.24	
Ohote Stm at Whatawhata/Horotiu Rd	11	17.4	17.1	14.2	21.0	1.9	0.20	11	19.8	21.0	9.6	32.0	9.1	0.10	
Puniu River at Bartons Corner Rd Br	12	9.0	9.2	7.8	9.8	1.2	-0.52	12	3.3	3.5	1.8	4.5	1.3	-0.36	
Waipa River at Mangaokewa Rd	12	5.3	5.2	4.8	6.0	0.7	0.53	12	1.4	1.4	0.3	1.9	0.5	-1.25	
Waipa River at Pirongia-Ngutunui Rd Br	12	12.0	12.0	9.4	15.5	3.0	0.20	12	5.1	4.6	3.0	7.7	2.9	0.30	
Waipa River at SH3 Otorohanga	12	10.4	10.8	7.8	13.2	2.8	-0.22	12	4.4	3.8	2.5	7.4	2.7	0.59	
Waitomo Stm at SH31 Otorohanga	12	8.9	8.9	7.7	9.9	0.9	-0.24	12	5.2	5.0	4.2	6.4	1.1	0.46	
Waitomo Stm at Tumutumu Rd	12	8.0	7.9	7.2	9.9	0.7	1.58	12	5.1	5.0	4.4	6.0	0.5	0.48	
Tributaries to the upper Waikato River															
Kawaunui Stm at SH5 Br	12	8.7	8.9	6.6	9.6	0.5	<u>-1.83</u>	12	12.1	12.0	7.5	18.8	5.7	0.37	
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	6.1	6.2	5.3	6.5	0.3	-1.05	12	2.8	2.7	2.0	4.2	0.9	0.81	
Mangakara Stm (Reporoa)	12	5.2	5.1	4.6	5.8	0.7	0.24	12	8.8	9.1	6.4	9.6	0.9	<u>-1.92</u>	
Mangakino Stm (Whakamaru) at Sandel Rd	12	3.9	3.9	3.6	4.2	0.3	-0.13	12	2.0	1.9	1.5	2.7	0.6	0.57	
Otamakokore Stm at Hossack Rd	12	38.8	40.0	22.0	46.0	10.0	-1.01	12	13.9	13.8	11.1	17.7	3.1	0.47	
Pueto Stm at Broadlands Rd Br	11	5.3	5.3	4.9	5.8	0.3	0.27	11	2.8	2.9	2.6	3.0	0.2	-0.33	
Tahunaatara Stm at Ohakuri Rd	12	5.4	5.5	4.6	5.8	0.5	-1.20	12	3.3	3.4	2.4	4.5	0.9	0.32	
Torepatutahi Stm at Vaile Rd Br	12	5.4	5.3	4.7	6.2	0.9	0.34	12	6.8	6.5	4.5	9.2	3.1	0.22	
Waiotapu Stm at Campbell Rd Br	12	107.0	109.5	73.0	128.0	23.5	-0.73	12	101.3	99.0	91.0	128.0	9.5	<u>1.71</u>	
Waiotapu Stm at Homestead Rd Br	12	61.8	66.0	37.0	81.0	25.0	-0.27	12	55.2	55.5	50.0	62.0	7.0	0.21	
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	76.9	79.0	55.0	89.0	15.0	-0.82	12	7.6	7.4	6.4	9.5	1.5	0.75	
Whirinaki Stm at Campbell Rd Br	12	4.9	4.9	4.5	5.1	0.3	-0.29	12	4.0	3.8	3.4	5.2	0.4	1.52	
West Coast															
Awakino River at Gribbon Rd	12	8.4	8.5	7.3	9.4	0.9	-0.25	12	3.7	3.8	2.7	4.4	0.5	-0.69	
Awakino River at SH3 Awakau Rd Junction	12	18.0	16.8	8.7	34.0	9.7	0.85	12	5.4	5.3	4.6	6.7	0.5	1.08	
Manganui River at Off Manganui Rd	12	17.1	17.0	12.9	20.0	3.3	-0.19	12	4.5	4.6	3.9	5.2	0.4	0.03	
Mangaotaki River at SH3 Br	12	8.3	8.2	7.4	10.6	0.9	1.64	12	3.7	3.6	2.8	4.6	0.9	0.13	
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	9.4	9.4	7.9	10.8	0.7	-0.05	12	2.9	2.8	2.4	3.5	0.5	0.29	
Mokau River at Awakau Rd	12	13.7	12.8	8.3	23.0	6.1	0.68	12	6.4	6.1	4.3	9.3	1.6	0.58	
Mokau River at Mangaokewa Rd (Off SH30)	12	6.5	6.5	5.5	7.6	0.6	0.19	12	3.1	3.1	2.4	4.0	0.7	0.37	
Mokau River at Totoro Rd Recorder	12	8.2	8.1	7.4	9.2	0.5	0.41	12	4.9	4.7	3.3	6.7	1.9	0.22	
Mokauiti Stm at Three Way Point - Aria	12	8.9	8.9	7.2	10.2	1.0	-0.19	12	6.9	7.2	3.1	10.2	2.2	-0.35	
Ohautira Stm at Waingaro Te Uku Rd	12	19.2	19.0	17.4	22.0	0.9	1.02	12	8.5	8.0	7.4	10.6	1.6	0.87	
Oparau River at Langdon Rd (Off Okupata Rd)	12	11.7	11.8	8.3	14.6	0.6	-0.47	12	2.8	2.8	2.1	3.2	0.5	-0.58	
Tawarau River at Off Speedies Rd	12	9.1	9.1	7.8	10.2	0.8	-0.17	12	3.1	3.0	2.6	3.8	0.7	0.18	
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	18.6	18.7	12.6	21.0	1.5	<u>-1.82</u>	12	9.3	8.8	6.2	12.8	3.0	0.23	
Waitetuna River at Te Uku-Waingaro Rd	12	14.4	14.5	13.0	15.4	0.6	-0.77	12	4.1	4.1	3.3	4.7	0.5	-0.33	
Inflows to Lake Taupo															
Hinemaiaia River at SH1	12	2.4	2.4	1.9	2.8	0.4	-0.21	12	2.2	2.2	1.7	2.9	0.4	0.81	
Kuratau River at SH41 Moerangi	12	4.2	4.2	3.9	4.7	0.5	0.22	12	1.1	1.1	0.8	1.4	0.4	-0.07	
Kuratau River at Te Rae Street T10	12	4.1	4.1	3.1	4.6	0.7	-0.67	12	1.9	1.9	1.3	2.3	0.5	-0.26	
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	5.0	5.0	4.7	5.5	0.5	0.39	12	9.9	9.6	8.8	11.4	1.8	0.47	
Tauranga-Taupo River at Te Kono Slackline	11	2.1	1.9	1.6	2.5	0.5	0.20	11	2.0	2.0	1.7	2.6	0.2	1.07	
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Cana	12	6.0	6.3	4.2	7.0	1.6	-0.56	12	13.5	13.1	10.3	17.0	2.2	0.28	
Tokaanu Stm at Off SH41 Turangi	12	3.0	3.0	2.7	3.3	0.3	0.26	12	3.6	3.7	3.2	4.1	0.5	0.11	
Waihaha River at SH32	12	3.6	3.6	3.2	4.0	0.5	0.07	12	0.9	0.9	0.7	1.2	0.2	0.35	
Waitahanui River at Blake Rd	12	3.2	3.2	2.9	3.6	0.3	0.45	12	1.8	1.7	1.6	2.3	0.3	1.27	
Whangamata Stm (Kinloch) at Whangamata Rd	12	3.7	3.8	3.4	4.3	0.3	0.74	12	3.7	3.7	3.4	4.3	0.4	0.92	
Whanganui Stm at Lakeside Lake Taupo	12	3.5	3.5	3.1	3.9	0.4	0.03	12	1.3	1.3	0.9	1.5	0.3	-0.86	
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	3.9	3.8	3.5	4.4	0.4	0.45	12	2.7	2.8	2.0	3.3	0.4	-0.25	

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

Silica - dissolved reactive (units: g.m⁻³ SiO₂)

Location	Count	Mean	Median	Min	Max	IQR	Skew
Coromandel							
Hikutaia River at Old Maratoto Rd	12	18.8	19.2	14.4	22.0	2.1	-0.76
Kauaeranga River at Smiths Cableway/Recorder	12	17.2	18.1	10.2	19.4	2.1	-1.67
Ohinemuri River at Queens Head	12	20.7	21.0	12.4	27.0	2.1	-0.74
Ohinemuri River at SH25 Br	12	21.3	21.0	15.2	29.0	3.8	0.44
Tairua River at Morrisons Br Hikuai	12	19.8	20.5	13.4	24.0	2.5	-0.95
Tapu River at Tapu-Coroglen Rd	12	18.8	18.9	15.4	21.0	1.6	-0.88
Waiau River at E309 Rd Ford	12	18.0	18.2	13.4	21.0	1.3	-1.14
Waitekauri River at U/S Ohinemuri Conflu	12	16.8	17.6	11.3	22.0	3.6	-0.27
Waiwawa River at SH25 Coroglen	12	16.4	17.3	10.0	20.0	2.9	-1.10
Wharekawa River at SH25	12	26.1	26.5	17.7	31.0	2.0	-1.37
Hauraki							
Mangawhero Stm (Kaihere) at Mangawara Rd	12	31.3	32.0	22.0	37.0	4.0	-1.08
Oraka Stm at Lake Rd	12	61.3	64.5	36.0	67.0	3.0	<u>-2.10</u>
Piako River at Kiwitahi	12	34.3	33.0	23.0	43.0	5.0	-0.33
Piako River at Paeroa-Tahuna Rd Br	12	35.8	36.5	25.0	45.0	6.5	-0.38
Piakonui Stm at Piakonui Rd	12	24.7	24.0	18.9	32.0	6.5	0.57
Waihou River at Okauia	12	62.1	65.0	41.0	67.0	5.0	<u>-2.16</u>
Waihou River at Whites Rd	12	73.8	73.5	72.0	77.0	3.0	0.52
Waiohotu Stm at Waiohotu Rd (Off SH5)	12	45.3	48.0	26.0	52.0	3.0	<u>-2.02</u>
Waiomou Stm at Matamata-Tauranga Rd	12	44.8	48.0	28.0	50.0	3.5	-1.60
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	26.4	26.0	17.6	34.0	4.5	-0.23
Waitoa River at Landsdowne Rd Br	12	42.4	41.5	29.0	53.0	6.0	-0.36
Waitoa River at Mellon Rd Recorder	12	47.9	48.0	32.0	64.0	12.0	-0.10
Tributaries to the lower Waikato River							
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	19.8	19.5	15.6	25.0	2.6	0.44
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	10.4	10.2	9.4	12.5	1.2	1.01
Karapiro Stm at Hickey Rd Bridge	12	35.6	36.5	24.0	47.0	8.0	0.03
Kirikiroa Stm at Tauhara Dr	12	57.9	60.5	29.0	72.0	13.5	-1.08
Komakorau Stm at Henry Rd	12	55.8	57.5	32.0	65.0	7.0	-1.64
Little Waipa Stm at Arapuni - Putaruru Rd	12	60.3	62.0	42.0	66.0	3.5	<u>-1.84</u>
Mangakotukutuku Stm (Rukuhia) at Peacocks Rd	12	46.7	48.5	17.9	72.0	24.5	-0.16
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	44.8	47.0	28.0	50.0	3.0	<u>-1.75</u>
Mangaone Stm at Annebrooke Rd Br	12	63.9	68.0	32.0	75.0	10.5	<u>-1.89</u>
Mangaonua Stm at Harbutt Road Bridge	12	27.6	26.5	19.7	36.0	6.0	0.22
Mangaonua Stm at Hoeka Rd	12	45.8	46.0	22.0	57.0	9.5	-1.26
Mangatangi River at SH2 Maramarua	12	18.5	18.5	13.1	23.0	5.5	-0.10
Mangatawhiri River at Lyons Rd At Buckingham Br	12	22.1	22.0	15.2	29.0	4.6	0.20
Mangawara Stm at Rutherford Rd Br	12	39.9	41.5	16.9	52.0	6.5	-1.45
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	56.1	59.0	23.0	70.0	12.0	-1.30
Matahuru Stm at Waiterimu Road Below Confluence	12	24.4	26.5	15.4	28.0	5.3	-1.16
Ohaeroa Stm at SH22 Br	11	15.4	15.1	9.2	23.0	3.1	0.33
Opuatia Stm at Ponganui Rd	12	13.7	13.8	11.4	18.1	1.3	1.26
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	53.9	55.5	36.0	59.0	2.5	<u>-2.03</u>
Waerenga Stm at Taniwha Rd	12	26.2	27.5	18.8	29.0	3.0	-1.32
Waitawhiriwhiri Stm at Edgecumbe Street	12	53.5	53.0	25.0	74.0	20.0	-0.25
Whakapipi Stm at SH22 Br	13	13.3	13.4	8.8	16.6	1.9	-0.72
Whakauru Stm at U/S SH1 Br	12	56.2	57.0	48.0	60.0	2.0	-1.64
Whangamarino River at Island Block Rd	12	13.4	14.5	7.2	16.7	4.2	-0.97
Whangamarino River at Jefferies Rd Br	12	24.8	26.0	12.9	30.0	4.5	-1.37
Whangape Stm at Rangiriri-Glen Murray Rd	12	3.6	3.3	0.1	11.0	5.7	0.66

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

Waipa River and Tributaries							
Kaniwhaniwha Stm at Wright Rd	12	15.0	14.7	10.0	20.0	3.0	0.08
Mangaohoi Stm at South Branch Maru Rd	12	41.2	40.5	30.0	50.0	8.0	-0.36
Mangaokewa Stm at Lawrence Street Br	12	30.1	31.0	26.0	36.0	5.0	0.28
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	40.0	40.5	34.0	44.0	2.0	-0.96
Mangapu River at Otorohanga	12	21.1	21.0	17.9	27.0	3.7	0.78
Mangatutu Stm (Waikeria) at Walker Rd Br	12	27.5	28.0	22.0	33.0	3.0	-0.24
Mangauika Stm at Te Awamutu Borough W/S Intake	12	15.8	16.3	10.3	19.3	4.2	-0.49
Ohote Stm at Whatawhata/Horotiu Rd	12	37.0	34.5	19.0	57.0	10.5	0.52
Puniu River at Bartons Corner Rd Br	12	38.5	38.5	28.0	48.0	5.5	-0.22
Waipa River at Mangaokewa Rd	12	27.7	27.5	21.0	35.0	5.0	0.26
Waipa River at Pirongia-Ngutunui Rd Br	12	24.7	24.0	19.9	32.0	4.5	0.80
Waipa River at SH3 Otorohanga	12	23.2	23.0	19.8	26.0	1.5	-0.36
Waitomo Stm at SH31 Otorohanga	12	10.5	10.7	6.9	11.6	0.7	<u>-2.16</u>
Waitomo Stm at Tumutumu Rd	12	10.4	10.6	9.0	11.7	1.4	-0.12

Tributaries to the upper Waikato River							
Kawaunui Stm at SH5 Br	12	66.9	71.5	27.0	75.0	5.5	<u>-2.47</u>
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	65.7	69.0	38.0	72.0	4.0	<u>-2.41</u>
Mangakara Stm (Reporoa)	12	63.5	66.5	40.0	68.0	2.5	<u>-2.57</u>
Mangakino Stm (Whakamaru) at Sandel Rd	12	42.6	44.0	30.0	48.0	4.5	-1.37
Otamakokore Stm at Hossack Rd	12	96.0	101.5	54.0	108.0	6.0	<u>-2.15</u>
Pueto Stm at Broadlands Rd Br	11	63.9	64.0	62.0	65.0	1.5	-0.57
Tahunaatara Stm at Ohakuri Rd	12	58.2	62.0	36.0	66.0	3.5	-1.68
Torepatutahi Stm at Vaile Rd Br	12	69.1	70.0	60.0	72.0	2.5	<u>-1.94</u>
Waiotapu Stm at Campbell Rd Br	12	127.2	131.5	96.0	140.0	11.5	-1.37
Waiotapu Stm at Homestead Rd Br	12	89.3	93.0	56.0	100.0	9.0	-1.56
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	85.8	87.0	76.0	89.0	2.5	-1.65
Whirinaki Stm at Campbell Rd Br	12	67.4	68.0	58.0	71.0	2.5	<u>-1.99</u>

West Coast							
Awakino River at Gribbon Rd	12	13.9	14.0	12.4	15.3	1.3	-0.30
Awakino River at SH3 Awakau Rd Junction	12	11.6	11.7	9.2	13.9	2.1	-0.21
Manganui River at Off Manganui Rd	12	15.5	15.6	13.2	17.2	2.1	-0.29
Mangaotaki River at SH3 Br	12	10.6	10.6	9.3	11.9	1.7	0.02
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	10.2	10.2	7.7	12.0	1.4	-0.42
Mokau River at Awakau Rd	12	14.1	14.2	11.6	16.1	2.4	-0.18
Mokau River at Mangaokewa Rd (Off SH30)	12	37.3	37.5	32.0	45.0	6.0	0.31
Mokau River at Totoro Rd Recorder	12	15.5	15.6	13.8	17.9	1.9	0.30
Mokauiti Stm at Three Way Point - Aria	12	13.8	13.8	11.3	17.5	3.0	0.42
Ohautira Stm at Waingaro Te Uku Rd	12	24.3	24.5	21.0	28.0	2.5	0.18
Oparau River at Langdon Rd (Off Okupata Rd)	12	16.3	16.5	8.2	19.7	3.3	-1.39
Tawarau River at Off Speedies Rd	12	10.2	10.5	8.0	11.1	0.9	-1.33
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	18.8	18.6	16.1	25.0	2.7	1.48
Waitetuna River at Te Uku-Waingaro Rd	12	19.2	19.1	17.2	22.0	2.9	0.30

Inflows to Lake Taupo							
Hinemaiaia River at SH1	12	47.0	49.0	30.0	53.0	5.5	<u>-1.87</u>
Kuratau River at SH41 Moerangi	12	31.4	32.0	22.0	41.0	6.5	-0.22
Kuratau River at Te Rae Street T10	12	42.6	41.0	27.0	59.0	5.5	0.46
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	70.2	70.5	68.0	73.0	3.0	0.06
Tauranga-Taupo River at Te Kono Slackline	11	34.7	36.0	18.6	44.0	4.5	-1.31
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	12	29.8	29.0	27.0	35.0	3.5	0.73
Tokaanu Stm at Off SH41 Turangi	12	56.3	56.0	55.0	59.0	2.5	0.70
Waihaha River at SH32	12	34.3	35.0	26.0	41.0	5.0	-0.60
Waitahanui River at Blake Rd	12	57.3	57.0	53.0	61.0	4.0	-0.12
Whangamata Stm (Kinloch) at Whangamata Rd	12	70.0	69.0	67.0	74.0	2.5	0.63
Whanganui Stm at Lakeside Lake Taupo	12	37.3	38.0	27.0	46.0	8.0	-0.28
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	49.4	50.0	40.0	54.0	4.5	-1.06

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

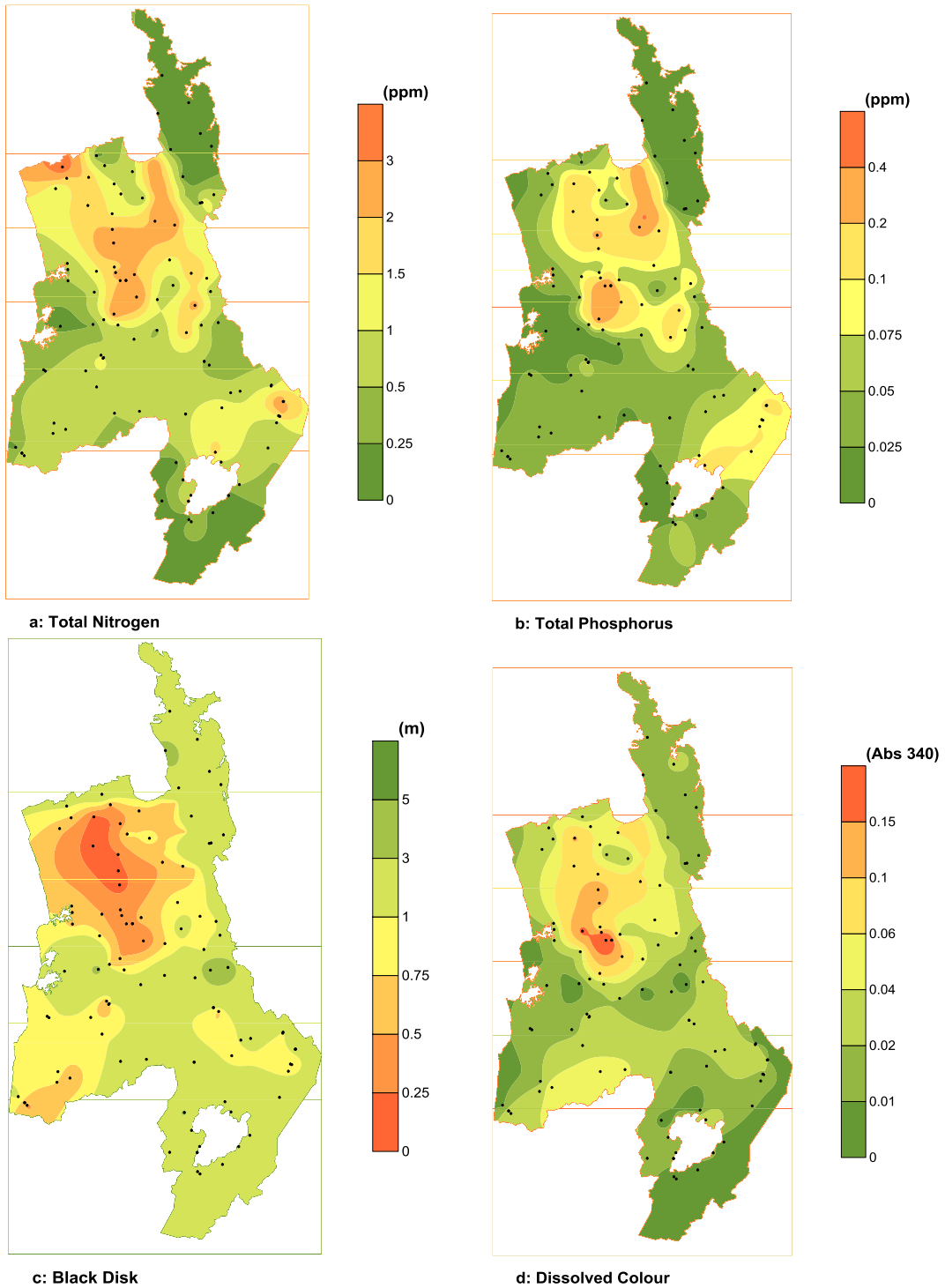


Figure 2: Spatial contour plots of four water quality parameters (based on 5 year median values, 2007-2011); a: Total Nitrogen, b: Total Phosphorus, c: Black disk, d: Dissolved colour (Abs 340).

3.2 Regional rivers monitoring programme comparison with water quality guidelines and standards

Number of samples (2011) that comply with satisfactory water quality standards and with excellent water quality standards and guidelines (*n=9, ^n=10, ^n=11)

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

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

Waipa River and Tributaries																					
Kaniwhaniwha Stm at Wright Rd	10	12	3	12	10	8	3	0*	n/a	n/a	2	9	0	12	4	0	0	0*	n/a	n/a	
Mangaohoi Stm at South Branch Maru Rd	12	12	12	12	9	0	8	6	4/4	Y	12	12	8	12	4	0	0	0	2/4	N	
Mangaokewa Stm at Lawrence Street Br	12	12	7	12	11	7	0	0^	n/a	n/a	10	12	0	12	5	0	0	0^	n/a	n/a	
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	10	12	0	12	5	0	0	0^	n/a	n/a	5	9	0	11	1	0	0	0^	n/a	n/a	
Mangapu River at Otorohanga	12	12	1	12	7	1	0	0~	1/4	N	7	12	0	10	3	0	0	0~	0/4	N	
Mangatutu Stm (Waikeria) at Walker Rd Br	12	12	9	12	8	10	4	5^	2/4	N	9	9	0	12	3	0	0	0^	0/4	N	
Manguika Stm at Te Awamutu Borough W/S Intake	12	12	8	12	12	11	12	11^	4/4	N	12	12	3	12	8	6	0	4^	0/4	N	
Ohote Stm at Whatawhata/Horotiu Rd	1	12	0	12	7	0	0	0	2/4	N	0	1	0	11	1	0	0	0	0/4	N	
Puniu River at Bartons Corner Rd Br	11	12	4	12	8	2	0	1~	n/a	n/a	7	7	0	11	1	0	0	0~	n/a	n/a	
Waipa River at Mangaokewa Rd	12	12	12	12	9	12	2	6	n/a	n/a	12	12	5	12	5	1	0	0	n/a	n/a	
Waipa River at Pirongia-Ngutunui Rd Br	12	12	0	12	8	1	0	0	2/4	N	5	12	0	12	4	0	0	0	0/4	N	
Waipa River at SH3 Otorohanga	12	12	7	12	8	10	3	2~	3/4	N	11	10	1	12	3	0	0	0~	0/4	N	
Waitomo Stm at SH31 Otorohanga	11	12	0	12	8	4	0	0^	3/4	N	6	12	0	12	3	0	0	0^	0/4	N	
Waitomo Stm at Tumutumu Rd	12	12	2	12	10	10	0	1^	3/4	N	12	12	0	12	4	0	0	0^	0/4	N	
Tributaries to the Upper Waikato River																					
Kawaunui Stm at SH5 Br	12	11	10	12	8	0	0	0	4/4	N	3	4	0	11	2	0	0	0	0/4	N	
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	12	8	12	11	0	0	0*	3/4	N	5	12	0	12	9	0	0	0*	0/4	N	
Mangakara Stm (Reporoa) at SH5	12	12	4	12	11	0	0	0	4/4	N	6	6	0	12	8	0	0	0	1/4	N	
Mangakino Stm (Whakamaru) at Sandel Rd	11^	12	11	12	12	3	1	6	n/a	n/a	11^	12	9	12	8	0	0	0	n/a	n/a	
Otamakokore Stm at Hossack Rd	10	12	11	12	1	n/a	0	0	4/4	N	8	9	0	12	1	n/a	0	0	0/4	N	
Pueto Stm at Broadlands Rd Br	11^	11^	11^	11^	9^	0^	1^	1^	4/4	Y	6^	11^	0^	11^	5^	0^	1^	0	4/4	Y	
Tahunaatara Stm at Ohakuri Rd	12	12	10	12	11	2	0	0	3/4	N	12	12	1	12	7	0	0	0	0/4	N	
Torepatutahi Stm at Vaile Rd Br	11	12	12	12	10	0	0	n/a	n/a	n/a	7	10	8	12	4	0	0	n/a	n/a	n/a	
Waiotapu Stm at Campbell Rd Br	12	0	0	10	0	n/a	0	0	4/4	Y	3	0	0	0	0	n/a	0	0	4/4	Y	
Waiotapu Stm at Homestead Rd Br	8	10	0	12	2	n/a	0	n/a	n/a	n/a	4	1	0	0	1	n/a	0	n/a	n/a	n/a	
Waipapa Stm at Tirohanga Rd Br	12	12	6	12	0	n/a	0	0	4/4	Y	12	12	0	12	0	n/a	0	0	1/4	N	
Whirinaki Stm at Corbett Rd	12	12	12	12	11	0	0	n/a	n/a	n/a	8	12	11	12	8	0	0	n/a	n/a	n/a	
West Coast																					
Awakino River at Gribbon Rd	12	12	11	12	11	11	11	7^	3/4	Y	12	11	10	12	6	0	1	0^	2/4	N	
Awakino River at SH3 Awakau Rd Junction	12	12	5	12	9	10	9	3^	3/4	Y	12	10	2	12	5	2	1	0^	1/4	N	
Manganui River at Off Manganui Rd	12	12	6	12	11	10	12	3^	3/4	N	12	12	0	12	6	0	1	0^	1/4	N	
Mangaotaki River at SH3 Br	12	12	5	12	11	8	0	2^	n/a	n/a	11	12	0	12	6	0	0	0^	n/a	n/a	
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	12	5	12	10	10	7	1	4/4	N	12	10	0	12	5	0	0	0	0/4	N	
Mokau River at Awakau Rd	12	12	2	12	8	6	3	2^	3/4	N	8	12	0	12	4	0	0	0^	0/4	N	
Mokau River at Mangaokewa Rd (Off SH30)	12	12	11	12	11	9	6	3~	3/4	N	12	12	0	12	7	0	0	0~	2/4	N	
Mokau River at Totoro Rd Recorder	12	12	3	12	8	9	1	1^	3/4	N	12	12	0	12	4	0	0	0^	0/4	N	
Mokauiti Stm at Three Way Point - Aria	12	12	0	12	9	6	3	1^	3/4	N	8	12	0	12	4	0	0	0^	0/4	N	
Ohautira Stm at Waingaro Te Uku Rd	12	12	0	12	10	7	6	0^	3/4	N	9	10	0	12	7	0	0	0^	0/4	N	
Oparau River at Langdon Rd (Off Okupata Rd)	12	12	9	12	9	10	11	3	n/a	n/a	12	12	2	12	4	2	0	0	n/a	n/a	
Tawarau River at Off Speedies Rd	12	12	6	12	10	9	4	0	n/a	n/a	12	9	0	12	6	0	0	0	n/a	n/a	
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	12	0	12	8	7	4	0^	n/a	n/a	7	11	0	12	4	0	0	0^	n/a	n/a	
Waitetuna River at Te Uku-Waingaro Rd	12	12	0	12	9	4	4	0^	2/4	N	9	10	0	11	5	0	0	0^	0/4	N	
Inflows to Lake Taupo																					
Hinemaiaia River at SH1	12	12	11	12	12	12	12	9^	4/4	Y	12	12	10	12	11	0	1	0^	4/4	Y	
Kuratau River at SH41 Moerangi	11^	12	12	12	12	12	12	10	n/a	n/a	5^	12	7	12	12	12	0	0	n/a	n/a	
Kuratau River at Te Rae Street	11^	12	11	12	12	12	0	n/a	4/4	Y	10^	12	11	12	6	3	0	n/a	1/4	N	
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Re	11	12	9	12	12	0	0	2	4/4	Y	2	12	2	12	11	0	0	0	2/4	N	
Tauranga-Taupo River at Te Kono Slackline	12	11^	10^	11^	12	11^	11^	9~	n/a	n/a	10	11^	10^	11^	12	0^	2^	0~	n/a	n/a	
Tokaanu at Off SH41 Turangi	8^	12	11	12	12	0	4	n/a	n/a	n/a	0^	10	11	12	7	0	0	n/a	n/a	n/a	
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over	11^	12	11	12	12	11	11	n/a	n/a	n/a	8^	12	10	12	6	3	3	n/a	n/a	n/a	
Waihaha River at SH32	11^	12	12	12	12	12	12	11^	4/4	Y	11^	11	11	12	8	0	0	0^	3/4	Y	
Waitahanui River at Blake Rd	12	12	11	12	12	1	3	10~	4/4	Y	12	12	10	12	11	0	0	0~	4/4	Y	
Whangamata Stm (Kinloch) at Whangamata Rd	12	12	12	12	12	0	0	n/a	n/a	n/a	8	11	7	12	11	0	0	n/a	n/a	n/a	
Whanganui Stm at Lakeside Lake Taupo	11^	12	12	12	12	12	9	n/a	4/4	Y	9^	12	9	12	9	3	0	n/a	4/4	N	
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	11^	12	11	12	12	10	0	n/a	4/4	Y	6^	12	1	12	10	0	0	n/a	1/4	N	

E.coli-m refers to whether the 2011 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)	Waikato Regional Council 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 River monitoring programme - water quality parameters and analytical methods

Id ¹	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
A780	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 (Hach DO meter, model HQ 30d)
DO (% Sat)	Dissolved oxygen (percent saturation)	Field measurement (Hach DO meter, model HQ 30d)
DRP	Dissolved reactive Phosphorus	Filtration, Molybdenum Blue Colorimetry. Discrete analyser. APHA 4500 PG (modified)
E. coli	Escherichia coli	Membrane Filtration (mFC Agar) confirmation by MUG Agar. APHA method 9222 G
ENT	Enterococci bacteria	Membrane Filtration (mE Agar) confirmation by EIA Agar. APHA method 9230 C
FC	Faecal coliforms	Membrane Filtration (mFC Agar). APHA method 9222 D
NH ₄ -N	Ammoniacal Nitrogen (Total)	Phenol/Hypochlorite Colorimetry. Discrete analyser. APHA method 4500-NH ₃ F (modified).
NNN	Nitrite/Nitrate Nitrogen	Automated Cadmium reduction. Flow injection analyser. APHA method 4500 – NO ₃ -I (modified).
pH	pH	Lab Meter @ 25°C. APHA method 4500-H ⁺ B
TEMP	Temperature	Field measurement (Hach DO meter, model HQ 30d)
TKN	Total Kjeldahl-Nitrogen	Acid digestion. Phenol/Hypochlorite colorimetry. Discrete analyser. APHA method 4500-N _{org} B (modified)
TN	Total Nitrogen	Calculated from NNN + TKN (Nitrite/Nitrate Nitrogen + Total Kjeldahl-Nitrogen)
TP	Total Phosphorus	Acid persulphate digestion, Colorimetry. Discrete Analyser. APHA method 4500-P E (modified)
TURB	Turbidity	Turbidity Meter Hach 2100N. APHA method 2130 B

¹ Water quality parameter identification code refers to Waikato Regional Council's water quality database (Timestudio) parameter short name.

APHA = Standards Methods for the Examination of Water and Wastewater, 21st Edition, 2005, APHA, AWWA, WEF