Annual Water Quality Report

July 2020 – June 2021

Watercare
An Auckland Council Organisation

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Introduction

This report provides an overview of the drinking water compliance monitoring data collected from the Water Treatment Plants (**WTPs**) and Distribution Network Zones managed and operated by Watercare Services Limited (**Watercare**).

This data is collected to ensure that Watercare remains compliant with the Drinking-water Standards for New Zealand 2005 (Revised 2018) (**DWSNZ**) and duties under the Health Act 1956 Part, 2A Drinking water.

A Maximum Acceptable Value (**MAV**) is the concentration of a microbial or chemical constituent below which the presence of that constituent does not pose any significant risk to the health of the consumer over a lifetime consumption of that water.

A Guideline Value (**GV**) is the concentration of specific water quality parameters which have no effect on human health but may affect the aesthetic qualities of a drinking water. Exceeding GVs may contribute to consumer complaints regarding the aesthetic qualities of a drinking water supply.

Where the MAV for a determinand was exceeded, Watercare responded in accordance with the DWSNZ, including notifying the Auckland Regional Public Health Service (**ARPHS**) and Wai Comply (Ministry of Health (MOH) appointed Drinking Water Assessors (DWAs)) of any event and conducting a full investigation. In all cases for Watercare, the investigation findings confirmed that the water supplied to consumers was compliant with DWSNZ.

The report consists of two parts. The first part summarises WTP data, and the second part data related to the Distribution Network.

Water Treatment Plant Data

The MAVs for monitored determinands at Watercare's WTPs are included with the analysis data itself. These compliance data summary tables include confirmation of the WTPs compliance with the applicable MAVs. This indication is only given for those determinands that have an assigned MAV.

If a determinand was not detected in the monitoring period, 'ND' ("not detected") is noted.

The MAVs can be found in Section 2 of Drinking Water Standards for New Zealand 2005 (Revised 2018), which is available on the MOH website.

Distribution Network Data

The GVs and MAVs for the monitored determinands in the Distribution Network are summarised below:

Drinking-water Standards for New Zealand 2005 (Revised 2018) MAVs and GVs

Determinand	GV	MAV	Unit
Chlorine Residual	0.6 - 1.0	5.0	mg/L
pH	7.0 - 8.5	-	pH unit
Turbidity	2.5	-	NTU
E. coli (Escherichia coli)	-	<1.0/100mL	MPN/100mL
Total coliforms	-	-	MPN/100mL

List of Water Treatment Plants and the Distribution Network Zones Supplied

Water Treatment Plant	Distribution Network Zones Supplied
Ardmore	Auckland Airport, Auckland, Anzac, Buckland, Central Business District, Clarks / Waiau Beach, East Tamaki / Botany, Glenbrook Beach, Glen Eden / New Lynn, Henderson, High Head, Hillsborough, Howick / Pakuranga, Hilltop, HBC / Waiwera, Kitchener, Maungawhau, Mangere, Mt Hobson, Manurewa, Otara / Papatoetoe / Manukau Central, Oratia, Otahuhu, Patumahoe, North Shore South, North Shore West, Swanson, Te Henga, Whenuapai
Bombay	Bombay
Cornwall Road	Waiuku
Helensville	Helensville / Parakai
Huia	Auckland, Central Business District, Glen Eden / New Lynn, Henderson, Hillsborough, HBC / Waiwera, Laingholm, Maungawhau, Montana, Oratia, Swanson, Te Henga, North Shore West, Whenuapai
Huia Village	Huia Village
Muriwai	Muriwai
Onehunga (Local)	Onehunga
Onehunga (Metro)	Auckland, Hillsborough
Papakura	Papakura

Water Treatment Plant	Distribution Network Zones Supplied
Pukekohe	Anzac, Buckland, Clarks / Waiau Beach, Glenbrook Beach, Hilltop, Kitchener, Patumahoe
Snells / Algies	Snells / Algies
Victoria Avenue	Waiuku
Waikato	Auckland Airport, Auckland, Anzac, Buckland, Central Business District, Clarks / Waiau Beach, East Tamaki / Botany, Glenbrook Beach, Glen Eden / New Lynn, Henderson, High Head, Hillsborough, Howick / Pakuranga, Hilltop, HBC / Waiwera, Kitchener, Maungawhau, Mangere, Mt Hobson, Manurewa, Otara / Papatoetoe / Manukau Central, Oratia, Otahuhu, Patumahoe, North Shore South, North Shore West, Swanson, Te Henga, Whenuapai
Waitakere	Glen Eden / New Lynn, HBC / Waiwera, Oratia, Swanson, Te Henga, Whenuapai
Waiuku Road	Waiuku
Warkworth Wells	Warkworth
Wellsford	Wellsford / Te Hana

Water Quality Compliance Data for the Water Treatment Plants

Ardmore WTP A Block Treated Water

Acid Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1080 (Sodium fluoroacetate)	mg/L	1	ND	ND	ND	0.0001	0.0035		√
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	5	ND	ND	ND	0.0001	0.01		√
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	5	ND	ND	ND	0.0001	0.04		√
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	5	ND	ND	ND	0.0001	0.1		√
Bentazone	mg/L	5	ND	ND	ND	0.0001			
Dichlorprop	mg/L	5	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	5	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	5	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	5	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	5	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance at 254nm	Abs units	92	0.022	0.006	0.012	0.002			
Alkalinity (Total) as $CaCO_3$	mg/L	52	19	11	16	1			
Aluminium	mg/L	52	0.027	0.009	0.020	0.005		0.1	
Bromate	mg/L	13	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	13	0.03	0.02	0.03	0.005			
Calcium	mg/L	13	7.8	6.3	7.0	0.01			
Calcium Hardness	mg/L	13	20	13	17	0.025			

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chlorate	mg/L	13	ND	ND	ND	0.01	0.8		√
Chloride	mg/L	13	14.60	12.90	13.61	0.02		250	
Chlorine Residual	mg/L	365	1.66	0.93	1.36	0.02	5	0.6-1.0	√
Chlorite	mg/L	13	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	13	ND	ND	ND	5		10	
Conductivity	mS/m	13	11.2	10.1	10.8	0.5			
Cyanide	mg/L	4	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	52	0.8	0.04*	0.7	0.02	1.5		√
Iodide	mg/L	4	0.005	0.003	0.004	0.002			
Iron	mg/L	52	0.066	ND	0.012	0.002		0.2	
Magnesium	mg/L	13	1.80	1.30	1.52	0.001			
Magnesium Hardness	mg/L	13	7.400	4.400	6.154	0.0041			
Manganese	mg/L	52	0.0290	0.0017	0.0049	0.0005	0.4	0.04	√
pH	pH Units	365	8.2	6.7	7.7	0.1		7.0-8.5	
Potassium	mg/L	4	1.0	0.9	1.0	0.1			
Silicon	mg/L	4	12.0	9.9	11.2	0.1			
Sodium	mg/L	4	9.8	8.5	9.1	0.1		200	
Sulphate	mg/L	4	11.5	8.6	9.9	0.02		250	
Suspended Solids	mg/L	13	0.3	ND	0.1	0.2			
Total Hardness	mg/L	13	26.00	18.00	23.31	0.029		200	
Total Organic Carbon TOC	mg/L	13	1.2	0.5	0.9	0.1			
Turbidity	NTU	365	1.7	0.1	0.2	0.05		2.5	

*The Ardmore A Block treated water fluoridation system was isolated for three days in November 2020 for maintenance activities. Laboratory sampling, undertaken on 2/11/2020, coincided with the period when fluoride dosing system was not in service.

Microbiology

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limits	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Confirmed Cryptosporidium per 100L	cysts/100 L	4	ND	ND	ND	1	<1		√
Confirmed Giardia per 100L	cysts/100 L	4	ND	ND	ND	1	<1		√
E. coli	MPN/100mL	365	ND	ND	ND	1	<1		√

Nutrients

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Ammonia	mg/L	4	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	4	0.006	0.004	0.005	0.005			
Nitrate (as NO_3)	mg/L	4	0.554	0.133	0.276	0.002	50		√
Nitrite (as NO_2)	mg/L	4	ND	ND	ND	0.002	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L	4	ND	ND	ND	0.1			
Total Phosphorus	mg/L	4	0.021	0.006	0.010	0.005			

Plasticizers

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
bis (2-ethylhexyl) adipate	µg/L	4	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	4	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Benzo(a)pyrene	µg/L	4	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	4	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	4	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	4	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	4	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	4	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	4	ND	ND	ND	0.1			
Methoxychlor	µg/L	4	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	4	ND	ND	ND	0.2			
DDT + isomers	µg/L	4	ND	ND	ND	0.2	1		√
Procymidone	µg/L	4	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	4	ND	ND	ND	0.2	20		√
Atrazine	µg/L	4	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	4	ND	ND	ND	0.1	10		√
Molinate	µg/L	4	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	4	ND	ND	ND	0.2	20		√
Propanil	µg/L	4	ND	ND	ND	0.1			
Simazine	µg/L	4	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	4	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	4	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	4	ND	ND	ND	0.2	40		√
Diazinon	µg/L	4	ND	ND	ND	0.1			
Pirimiphos methyl	µg/L	4	ND	ND	ND	0.2	100		√

Trace Elements

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Antimony	mg/L	4	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	4	0.0002	0.0002	0.0002	0.0001	0.01		√
Barium	mg/L	4	0.0072	0.0047	0.0058	0.0002	0.7		√
Boron	mg/L	13	0.015	ND	0.006	0.005	1.4		√
Cadmium	mg/L	4	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	4	0.0006	ND	0.0001	0.0001	0.05		√
Copper	mg/L	4	0.0003	0.0002	0.0003	0.0002	2		√
Lead	mg/L	4	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	4	0.0006	0.0003	0.0004	0.0001			
Mercury	mg/L	4	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	4	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	4	0.0002	ND	ND	0.0001	0.08		√
Selenium	mg/L	4	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	4	ND	ND	ND	0.001		1.5	

Trihalomethanes

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Bromodichloromethane	mg/L	52	0.0085	0.0011	0.0049	0.0001	0.06		√
Bromoform	mg/L	52	0.0035	ND	0.0011	0.0001	0.1		√
Chloroform	mg/L	52	0.0110	ND	0.0042	0.0001	0.4		√
Dibromochloromethane	mg/L	52	0.0110	ND	0.0056	0.0001	0.15		√
THM Sum Ratio		52	0.25	0.03	0.14		1		√

Volatile Organic Compounds

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
1,1,1-trichloroethane	mg/L	4	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	4	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	4	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	4	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	4	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	4	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	4	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	4	ND	ND	ND	0.0001	0.005		√
Ethylbenzene	mg/L	4	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	4	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	4	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethene	mg/L	4	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	4	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	4	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	4	ND	ND	ND	0.0001	0.02		√

Halo Acetic Acids (HAAs)

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Bromoacetic Acid	mg/L	13	ND	ND	ND	0.0005			
Bromochloroacetic Acid	mg/L	13	0.0053	0.0016	0.0030	0.0005			
Monochloroacetic Acid	mg/L	13	ND	ND	ND	0.0005	0.02		√
Dibromoacetic Acid	mg/L	13	0.0064	ND	0.0025	0.0005			
Dichloroacetic Acid	mg/L	13	0.0048	ND	0.0024	0.0005	0.05		√
Trichloroacetic Acid	mg/L	13	0.0026	ND	0.0006	0.0005	0.2		√
HAA Sum Ratio		13	0.092	ND	0.039				

Ardmore WTP B1 Block Treated Water

Acid Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1080 (Sodium fluoroacetate)	mg/L	1	ND	ND	ND	0.0001	0.0035		√
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	4	ND	ND	ND	0.0001	0.01		√
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	4	ND	ND	ND	0.0001	0.04		√
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	4	ND	ND	ND	0.0001	0.1		√
Bentazone	mg/L	4	ND	ND	ND	0.0001			
Dichlorprop	mg/L	4	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	4	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	4	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	4	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	4	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance at 254nm	Abs units	92	0.210	0.006	0.014	0.002			
Alkalinity (Total) as $CaCO_3$	mg/L	52	20	15	16	1			
Aluminium	mg/L	52	0.065	0.015	0.021	0.005		0.1	
Bromate	mg/L	13	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	13	0.03	0.02	0.02	0.005			
Calcium	mg/L	13	7.5	6.0	7.0	0.01			
Calcium Hardness	mg/L	13	19	15	17	0.025			
Chlorate	mg/L	13	ND	ND	ND	0.01	0.8		√

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chlorine Residual	mg/L	364**	1.71	0.86	1.34	0.02	5	0.6-1.0	√
Chlorite	mg/L	13	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	13	ND	ND	ND	5		10	
Conductivity	mS/m	13	11.5	10.2	10.8	0.5			
Cyanide	mg/L	4	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	52	0.78	0.52	0.70	0.02	1.5		√
Iodide	mg/L	4	0.005	0.003	0.004	0.001			
Iron	mg/L	52	0.031	0.008	0.012	0.002		0.2	
Magnesium	mg/L	13	1.80	1.30	1.51	0.001			
Magnesium Hardness	mg/L	13	7.300	5.300	6.215	0.0041			
Manganese	mg/L	52	0.0190	0.0024	0.0055	0.0005	0.4	0.04	√
pH	pH unit	364**	8.7	6.8	7.7	0.1		7.0-8.5	
Potassium	mg/L	4	1.1	0.9	1.0	0.05			
Silicon	mg/L	4	12.0	9.9	11.2	0.1			
Sodium	mg/L	4	9.5	8.5	9.0	0.1		200	
Sulphate	mg/L	4	11.5	8.6	9.9	0.92		250	
Suspended Solids	mg/L	13	0.4	ND	0.1	0.2			
Total Hardness	mg/L	13	25.00	21.00	23.54	0.029		200	
Total Organic Carbon	mg/L	13	1.3	0.4	0.9	0.1			
Turbidity	NTU	364**	13*	0.1	0.2	0.05		2.5	

*An investigation into one turbidity result of 13NTU, collected on 26/10/2020 from the Ardmore WTP B1 Block confirmed that this result is not representative of water quality supplied from this WTP.

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Confirmed Cryptosporidium per 100L	cysts/100 L	5	ND	ND	ND	1	<1		√
Confirmed Giardia per 100L	cysts/100 L	5	ND	ND	ND	1	<1		√

Microbiology cont.

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
E. coli	MPN/100mL	364**	ND	ND	ND	1	<1		√

**The Ardmore B1 treated water tank was isolated for maintenance on 16/09/2020. Laboratory sampling for E.coli, chlorine residual, pH and turbidity was not undertaken while the treated water tank was isolated.

Nutrients

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Ammonia	mg/L	4	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	4	0.009	0.005	0.006	0.005			
Nitrate (as NO_3)	mg/L	4	0.549	0.102	0.268	0.002	50		√
Nitrite (as NO_2)	mg/L	4	ND	ND	ND	0.002	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L	4	ND	ND	ND	0.1			
Total Phosphorus	mg/L	4	0.008	ND	0.006	0.005			

Plasticizers

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
bis (2-ethylhexyl) adipate	µg/L	4	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	4	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Benzo(a)pyrene	µg/L	4	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	4	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	4	ND	ND	ND	0.01	0.2		√
Llindane	µg/L	4	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	4	ND	ND	ND	0.01			
Organochlorine Pesticides cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Heptachlor epoxide	µg/L	4	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	4	ND	ND	ND	0.1			
Methoxychlor	µg/L	4	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	4	ND	ND	ND	0.2			
DDT + isomers	µg/L	4	ND	ND	ND	0.2	1		√
Procymidone	µg/L	4	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	4	ND	ND	ND	0.2	20		√
Atrazine	µg/L	4	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	4	ND	ND	ND	0.1	10		√
Molinate	µg/L	4	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	4	ND	ND	ND	0.2	20		√
Propanil	µg/L	4	ND	ND	ND	0.1			
Simazine	µg/L	4	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	4	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	4	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	4	ND	ND	ND	0.2	40		√
Diazinon	µg/L	4	ND	ND	ND	0.1			
Pirimiphos methyl	µg/L	4	ND	ND	ND	0.2	100		√

Trace Elements

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Antimony	mg/L	4	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	4	0.0002	0.0002	0.0002	0.0001	0.01		√
Barium	mg/L	4	0.0073	0.0047	0.0060	0.0002	0.7		√
Boron	mg/L	13	0.015	ND	0.006	0.005	1.4		√
Cadmium	mg/L	4	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	4	ND	ND	ND	0.0001	0.05		√
Copper	mg/L	4	0.0009	0.0002	0.0004	0.0002	2		√
Lead	mg/L	4	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	4	0.0006	ND	0.0003	0.0001			
Mercury	mg/L	4	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	4	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	4	0.0002	ND	0.0001	0.0001	0.08		√
Selenium	mg/L	4	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	4	ND	ND	ND	0.001		1.5	

Trihalomethanes

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Bromodichloromethane	mg/L	52	0.0100	ND	0.0060	0.0001	0.06		√
Bromoform	mg/L	52	0.0034	ND	0.0013	0.0001	0.1		√
Chloroform	mg/L	52	0.0120	ND	0.0050	0.0001	0.4		√
Dibromochloromethane	mg/L	52	0.0130	ND	0.0069	0.0001	0.15		√
THM Sum Ratio		52	0.30	ND	0.17		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	4	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	4	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	4	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	4	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	4	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	4	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	4	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	4	ND	ND	ND	0.0001	0.005		√
Ethylbenzene	mg/L	4	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	4	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	4	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethene	mg/L	4	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	4	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	4	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	4	ND	ND	ND	0.0001	0.02		√

Halo Acetic Acids (HAAs)									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromoacetic Acid	mg/L	13	ND	ND	ND	0.0005			
Bromochloroacetic Acid	mg/L	13	0.0051	ND	0.0028	0.0005			
Monochloroacetic Acid	mg/L	13	ND	ND	ND	0.0005	0.02		√
Dibromoacetic Acid	mg/L	13	0.0066	ND	0.0024	0.0005			
Dichloroacetic Acid	mg/L	13	0.0035	ND	0.0023	0.0005	0.05		√
Trichloroacetic Acid	mg/L	13	0.0025	ND	0.0015	0.0005	0.2		√
HAA Sum Ratio		13	0.081	ND	0.053				

Ardmore WTP B2 Block Treated Water*

* The Ardmore WTP B2 Block was isolated for upgrades on 22 June 2020. This treated water tank remained isolated until the end of the reporting period specified in the report. Compliance monitoring sampling was not undertaken while the treated water tank was isolated.

Bombay WTP Treated Water

Acid Herbicides

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	13	ND	ND	ND	0.0001	0.01		√
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	13	ND	ND	ND	0.0001	0.04		√
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	13	ND	ND	ND	0.0001	0.1		√
Bentazone	mg/L	13	ND	ND	ND	0.0001			
Dichlorprop	mg/L	13	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	13	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	13	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	13	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	13	ND	ND	ND	0.0001	0.1		√

Chemical and Physical

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Alkalinity (Total) as $CaCO_3$	mg/L	4	78	67	72	1			
Aluminium	mg/L	4	0.006	ND	0.001	0.005		0.1	
Bromate	mg/L	4	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	4	0.03	0.02	0.03	0.005			
Calcium	mg/L	4	15.0	11.0	13.3	0.01			
Calcium Hardness	mg/L	4	39.0	27.0	33.5	0.025			
Chlorate	mg/L	4	ND	ND	ND	0.01	0.8		√
Chloride	mg/L	4	82.10	76.40	79.23	0.02		250	
Chlorine Residual	mg/L	121	1.38	0.43	0.84	0.02	5	0.6-1.0	√
Chlorite	mg/L	4	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	1	ND	ND	ND	5		10	

Chemical and Physical

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Conductivity	mS/m	1	39.6	39.6	39.6	0.5			
Cyanide	mg/L	1	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	4	0.03	ND	0.01	0.02	1.5		√
Iodide	mg/L	1	0.008	0.008	0.008	0.002			
Iron	mg/L	4	0.007	ND	0.004	0.002		0.2	
Magnesium	mg/L	4	16.00	11.00	13.50	0.001			
Magnesium Hardness	mg/L	4	65.000	45.000	55.500	0.0041			
Manganese	mg/L	4	ND	ND	ND	0.0005	0.4	0.04	√
pH	pH Units	121	8.2	6.7	7.6	0.1		7.0-8.5	
Potassium	mg/L	1	1.4	1.4	1.4	0.1			
Silicon	mg/L	1	40.0	40.0	40.0	0.1			
Sodium	mg/L	1	38.0	38.0	38.0	0.1		200	
Sulphate	mg/L	1	ND	ND	ND	0.02		250	
Suspended Solids	mg/L	1	ND	ND	ND	0.2			
Total Dissolved Solids	mg/L	1	240	240	240	15		1000	
Total Hardness	mg/L	4	100.00	72.00	88.00	0.029		200	
Total Organic Carbon TOC	mg/L	13	0.4	ND	0.3	0.1			
Turbidity	NTU	121	0.6	0.1	0.1	0.05		2.5	

Microbiology

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
E. coli	MPN/100mL	121	ND	ND	ND	1	<1		√

Nutrients

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Ammonia	mg/L	4	ND	ND	ND	0.005		1.5	

Nutrients cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Dissolved Reactive Phosphorus	mg/L	1	0.005	0.005	0.005	0.005			
Nitrate (as NO_3)	mg/L	52	5.314	1.019	4.017	0.002	50		√
Nitrite (as NO_2)	mg/L	1	ND	ND	ND	0.002	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L	1	ND	ND	ND	0.1			
Total Phosphorus	mg/L	1	ND	ND	ND	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	4	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	4	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	4	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	4	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	4	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	4	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	4	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	4	ND	ND	ND	0.01			

Organochlorine Pesticides cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Hexachlorobenzene	µg/L	4	ND	ND	ND	0.1			
Methoxychlor	µg/L	4	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	4	ND	ND	ND	0.2			
DDT + isomers	µg/L	4	ND	ND	ND	0.2	1		√
Procymidone	µg/L	4	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	4	ND	ND	ND	0.2	20		√
Atrazine	µg/L	4	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	4	ND	ND	ND	0.1	10		√
Molinate	µg/L	4	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	4	ND	ND	ND	0.2	20		√
Propanil	µg/L	4	ND	ND	ND	0.1			
Simazine	µg/L	4	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	4	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	4	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	4	ND	ND	ND	0.2	40		√
Diazinon	µg/L	4	ND	ND	ND	0.1			
Pirimiphos methyl	µg/L	4	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	1	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	1	ND	ND	ND	0.0001	0.01		√
Barium	mg/L	1	0.0015	0.0015	0.0015	0.0002	0.7		√
Boron	mg/L	1	0.01	0.01	0.01	0.005	1.4		√
Cadmium	mg/L	4	ND	ND	ND	0.00005	0.004		√

Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chromium	mg/L	1	ND	ND	ND	0.0001	0.05		√
Copper	mg/L	4	0.0470	ND	0.0220	0.0002	2		√
Lead	mg/L	1	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	1	0.0006	0.0006	0.0006	0.0001			
Mercury	mg/L	1	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	1	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	1	ND	ND	ND	0.0001	0.08		√
Selenium	mg/L	1	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	1	0.001	0.001	0.001	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	13	0.0017	ND	0.0003	0.0001	0.06		√
Bromoform	mg/L	13	0.0001	ND	ND	0.0001	0.1		√
Chloroform	mg/L	13	ND	ND	ND	0.0001	0.4		√
Dibromochloromethane	mg/L	13	ND	ND	ND	0.0001	0.15		√
THM Sum Ratio		13	0.03	ND	ND		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	1	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	1	ND	ND	ND	0.0001	0.03		√

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,4-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	1	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	1	ND	ND	ND	0.0001	0.005		√
Ethylbenzene	mg/L	1	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	1	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	1	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethene	mg/L	1	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	1	ND	ND	ND	0.0001	0.8	0.03	√
Trichloroethene	mg/L	1	ND	ND	ND	0.0001	0.02		√

Halo Acetic Acids (HAAs)									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromoacetic Acid	mg/L	4	ND	ND	ND	0.0005			
Bromochloroacetic Acid	mg/L	4	ND	ND	ND	0.0005			
Monochloroacetic Acid	mg/L	4	ND	ND	ND	0.0005	0.02		√
Dibromoacetic Acid	mg/L	4	0.0006	ND	0.0001	0.0005			
Dichloroacetic Acid	mg/L	4	ND	ND	ND	0.0005	0.05		√
Trichloroacetic Acid	mg/L	4	ND	ND	ND	0.0005	0.2		√
HAA Sum Ratio		4	ND	ND	ND				

Cornwall Road WTP Treated Water

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Alkalinity (Total) as $CaCO_3$	mg/L	4	130	35	106	1			
Aluminium	mg/L	1	ND	ND	ND	0.005		0.1	
Bromate	mg/L	1	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	1	0.10	0.10	0.10	0.005			
Calcium	mg/L	13	34.0	30.0	31.9	0.010			
Calcium Hardness	mg/L	13	85	63	78	0.025			
Chlorate	mg/L	1	ND	ND	ND	0.010	0.8		√
Chloride	mg/L	1	32.90	32.90	32.90	0.020		250	
Chlorine Residual	mg/L	121	1.62	0.44	0.85	0.020	5	0.6-1.0	√
Chlorite	mg/L	1	ND	ND	ND	0.005	0.80		√
Colour	Hazen Units	1	ND	ND	ND	5		10	
Conductivity	mS/m	1	20.6	20.6	20.6	0.500			
Cyanide	mg/L	1	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	1	0.04	0.04	0.04	0.020	1.5		√
Iodide	mg/L	1	0.002	0.002	0.002	0.002			
Iron	mg/L	13	0.017	ND	0.002	0.002		0.2	
Magnesium	mg/L	13	11.00	8.00	9.78	0.001			
Magnesium Hardness	mg/L	13	44.000	30.000	39.462	0.004			
Manganese	mg/L	13	0.0001	ND	ND	0.0005	0.4	0.04	√
pH	pH Units	121	8.1	7.9	8.0	0.100		7.0-8.5	
Potassium	mg/L	1	3.4	3.4	3.4	0.100			
Silicon	mg/L	1	50.0	50.0	50.0	0.100			
Sodium	mg/L	1	25.0	25.0	25.0	0.100		200	
Sulphate	mg/L	1	5.2	5.2	5.2	0.020		250	
Suspended Solids	mg/L	1	ND	ND	ND	0.2			

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Total Dissolved Solids	mg/L	1	130	130	130	15.000		1000	
Total Hardness	mg/L	13	130.00	95.00	116.54	0.029		200	
Turbidity	NTU	121	0.7	ND	0.1	0.05		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E. coli	MPN/100mL	121	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L	1	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	1	0.007	0.007	0.007	0.005			
Nitrate (as NO_3)	mg/L	1	0.133	0.133	0.133	0.002	50		√
Nitrite (as NO_2)	mg/L	1	ND	ND	ND	0.002	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L	1	ND	ND	ND	0.1			
Total Phosphorus	mg/L	1	0.042	0.042	0.042	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	1	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	1	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	1	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	1	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	1	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	1	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	1	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	1	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	1	ND	ND	ND	0.1			
Methoxychlor	µg/L	1	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	1	ND	ND	ND	0.2			
pp-DDT	µg/L	1	ND	ND	ND	0.2	1		√
Procymidone	µg/L	1	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	1	ND	ND	ND	0.2	20		√
Atrazine	µg/L	1	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	1	ND	ND	ND	0.1	10		√
Molinate	µg/L	1	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	1	ND	ND	ND	0.2	20		√
Propanil	µg/L	1	ND	ND	ND	0.1			
Simazine	µg/L	1	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	1	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	1	ND	ND	ND	0.2	30		√

Organophosphorus pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chlorpyriphos	µg/L	1	ND	ND	ND	0.2	40		√
Diazinon	µg/L	1	ND	ND	ND	0.1			
Pirimiphos methyl	µg/L	1	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	1	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	13	0.0048	0.0036	0.0045	0.0001	0.01		√
Barium	mg/L	1	0.0004	0.0004	0.0004	0.0002	0.7		√
Boron	mg/L	1	0.019	0.019	0.019	0.005	1.4		√
Cadmium	mg/L	1	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	1	ND	ND	ND	0.0001	0.05		√
Copper	mg/L	1	ND	ND	ND	0.0002	2		√
Lead	mg/L	1	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	1	0.0100	0.0100	0.0100	0.0001			
Mercury	mg/L	1	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	1	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	1	ND	ND	ND	0.0001	0.08		√
Selenium	mg/L	1	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	1	ND	ND	ND	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	13	ND	ND	ND	0.0001	0.06		√
Bromoform	mg/L	13	0.0016	ND	0.0002	0.0001	0.1		√
Chloroform	mg/L	13	ND	ND	ND	0.0001	0.4		√

Trihalomethanes cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Dibromochloromethane	mg/L	13	0.0012	ND	0.0002	0.0001	0.15		√
THM Sum Ratio		13	0.03	ND	0.02		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	1	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	1	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	1	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	1	ND	ND	ND	0.0001	0.005		√
Ethylbenzene	mg/L	1	ND	ND	ND	0.0001	0.3	0.002	√
m- & p-Xylene	mg/L	1	ND	ND	ND	0.0001	0.6		√
Styrene	mg/L	1	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethene	mg/L	1	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	1	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	1	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	1	ND	ND	ND	0.0001	0.02		√

Helensville WTP Treated Water

Acid Herbicides

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	13	ND	ND	ND	0.0001	0.01		√
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	13	ND	ND	ND	0.0001	0.04		√
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	13	ND	ND	ND	0.0001	0.1		√
Bentazone	mg/L	13	ND	ND	ND	0.0001			
Dichlorprop	mg/L	13	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	13	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	13	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	13	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	13	ND	ND	ND	0.0001	0.1		√

Chemical and Physical

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
UV absorbance at 254nm	Abs units	52	0.040	ND	0.014	0.002			
Alkalinity (Total) as $CaCO_3$	mg/L	52	110	42	79	1			
Aluminium	mg/L	52	0.032	0.010	0.014	0.005		0.1	
Bromate	mg/L	4	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	4	0.20	0.13	0.15	0.005			
Calcium	mg/L	13	22.0	10.0	16.8	0.01			
Calcium Hardness	mg/L	13	55	26	42	0.025			
Chlorate	mg/L	4	ND	ND	ND	0.01	0.8		√
Chloride	mg/L	4	73.10	59.60	67.92	0.02		250	
Chlorine Residual	mg/L	121	1.97	0.77	1.32	0.02	5	0.6-1.0	√
Chlorite	mg/L	4	ND	ND	ND	0.005	0.8		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Colour	Hazen Units	4	ND	ND	ND	5		10	
Conductivity	mS/m	13	59.1	38.2	48.5	0.5			
Cyanide	mg/L	4	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	13	0.09	ND	0.04	0.02	1.5		√
Iodide	mg/L	4	0.004	0.001	0.003	0.002			
Iron	mg/L	13	0.037	ND	0.004	0.002		0.2	
Magnesium	mg/L	13	21.00	9.00	14.63	0.001			
Magnesium Hardness	mg/L	13	85.000	37.000	60.133	0.0041			
Manganese	mg/L	13	0.0089	0.0028	0.0053	0.0005	0.4	0.04	√
pH	pH Units	121	7.9	7.0	7.2	0.1		7.0-8.5	
Potassium	mg/L	4	4.4	2.9	3.4	0.1			
Silicon	mg/L	4	27.0	19.0	23.8	0.1			
Sodium	mg/L	4	56.0	43.0	49.8	0.1		200	
Sulphate	mg/L	4	70.3	4.5	44.4	0.02		250	
Suspended Solids	mg/L	13	0.6	ND	0.1	0.2			
Total Dissolved Solids	mg/L	13	380	230	292	15		1000	
Total Hardness	mg/L	13	140.00	73.00	104.00	0.029		200	
Total Organic Carbon TOC	mg/L	51	3.7	0.3	1.2	0.1			
Turbidity	NTU	121	0.3	0.1	0.1	0.05		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E. coli	MPN/100mL	121	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L	4	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	13	0.005	0.003	0.004	0.005			
Nitrate (as NO_3)	mg/L	13	0.682	0.049	0.306	0.002	50		√
Nitrite (as NO_2)	mg/L	13	ND	ND	ND	0.002	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L	4	0.280	ND	0.070	0.1			
Total Phosphorus	mg/L	13	0.007	ND	0.002	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	13	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	13	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	13	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	13	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	13	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	13	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	13	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	13	ND	ND	ND	0.01			

Organochlorine Pesticides cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Hexachlorobenzene	µg/L	13	ND	ND	ND	0.1			
Methoxychlor	µg/L	13	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	13	ND	ND	ND	0.2			
DDT + isomers	µg/L	13	ND	ND	ND	0.2	1		√
Procymidone	µg/L	13	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	13	ND	ND	ND	0.2	20		√
Atrazine	µg/L	13	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	13	ND	ND	ND	0.1	10		√
Molinate	µg/L	13	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	13	ND	ND	ND	0.2	20		√
Propanil	µg/L	13	ND	ND	ND	0.1			
Simazine	µg/L	13	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	13	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	13	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	13	ND	ND	ND	0.2	40		√
Diazinon	µg/L	13	ND	ND	ND	0.1			
Pirimiphos methyl	µg/L	13	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	4	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	13	0.0005	0.0001	0.0003	0.0001	0.01		√
Barium	mg/L	4	0.0140	0.0110	0.0130	0.0002	0.7		√
Boron	mg/L	4	0.032	0.015	0.022	0.005	1.4		√
Cadmium	mg/L	4	ND	ND	ND	0.00005	0.004		√

Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chromium	mg/L	4	ND	ND	ND	0.0001	0.05		√
Copper	mg/L	4	0.0010	ND	0.0005	0.0002	2		√
Lead	mg/L	4	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	4	0.0033	0.0021	0.0028	0.0001			
Mercury	mg/L	4	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	4	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	4	0.0004	0.0002	0.0003	0.0001	0.08		√
Selenium	mg/L	4	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	4	0.004	0.001	0.003	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	52	0.0076	ND	0.0025	0.0001	0.06		√
Bromoform	mg/L	52	0.0110	ND	0.0045	0.0001	0.1		√
Chloroform	mg/L	52	0.0033	ND	0.0007	0.0001	0.4		√
Dibromochloromethane	mg/L	52	0.0180	ND	0.0060	0.0001	0.15		√
THM Sum Ratio		52	0.35	ND	0.13		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	13	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	13	ND	ND	ND	0.0001	0.03		√

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,4-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	13	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	13	ND	ND	ND	0.0001	0.005		√
Ethylbenzene	mg/L	13	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	13	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	13	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethene	mg/L	13	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	13	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	13	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	13	ND	ND	ND	0.0001	0.02		√

Halo Acetic Acids (HAAs)									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromoacetic Acid	mg/L	4	ND	ND	ND	0.0005			
Bromochloroacetic Acid	mg/L	4	0.0020	D	0.0009	0.0005			
Monochloroacetic Acid	mg/L	4	ND	ND	ND	0.0005	0.02		√
Dibromoacetic Acid	mg/L	4	0.0038	ND	0.0021	0.0005			
Dichloroacetic Acid	mg/L	4	0.0011	ND	0.0005	0.0005	0.05		√
Trichloroacetic Acid	mg/L	4	ND	ND	ND	0.0005	0.2		√
HAA Sum Ratio		4	0.023	ND	0.010				

Huia Village WTP Treated Water

Acid Herbicides

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	4	ND	ND	ND	0.0001	0.01		√
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	4	ND	ND	ND	0.0001	0.04		√
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	4	ND	ND	ND	0.0001	0.1		√
Bentazone	mg/L	4	ND	ND	ND	0.0001			
Dichlorprop	mg/L	4	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	4	ND	ND	ND	0.0001	0.002		√
Mecoprop (MCPP)	mg/L	4	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	4	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	4	ND	ND	ND	0.0001	0.1		√

Chemical and Physical

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
UV absorbance at 254nm	Abs units	52	0.035	0.007	0.014	0.002			
Alkalinity (Total) as $CaCO_3$	mg/L	52	27	15	22	1			
Aluminium	mg/L	51	0.088	ND	0.014	0.005		0.1	
Bromate	mg/L	13	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	13	0.05	0.01	0.04	0.005			
Calcium	mg/L	13	6.0	4.2	5.0	0.01			
Calcium Hardness	mg/L	13	15	11	13	0.025			
Chlorate	mg/L	13	0.24	0.03	0.11	0.01	0.8		√
Chloride	mg/L	4	33.40	32.00	32.73	0.02		250	
Chlorine Residual	mg/L	122	1.76	0.74	1.27	0.02	5	0.6-1.0	√

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chlorite	mg/L	13	0.007	ND	0.001	0.005	0.8		√
Colour	Hazen Units	12	ND	ND	ND	5		10	
Conductivity	mS/m	12	17.6	15.9	16.8	0.5			
Cyanide	mg/L	4	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	12	ND	ND	ND	0.02	1.5		√
Iodide	mg/L	4	0.003	0.002	0.002	0.002			
Iron	mg/L	13	0.024	ND	0.003	0.002		0.2	
Magnesium	mg/L	13	3.40	2.60	2.94	0.001			
Magnesium Hardness	mg/L	13	14.000	11.000	12.154	0.0041			
Manganese	mg/L	13	0.0010	ND	0.0001	0.0005	0.4	0.04	√
pH	pH Units	122	8.2	7.2	7.8	0.1		7.0-8.5	
Potassium	mg/L	3	1.1	0.9	1.0	0.1			
Silicon	mg/L	3	14.0	13.0	13.3	0.1			
Sodium	mg/L	3	19.0	18.0	18.3	0.1		200	
Sulphate	mg/L	4	6.1	4.8	5.8	0.02		250	
Suspended Solids	mg/L	12	0.3	ND	ND	0.2			
Total Hardness	mg/L	13	28.00	22.00	24.43	0.1		200	
Total Organic Carbon TOC	mg/L	12	1.2	0.7	1.0	0.1			
Turbidity	NTU	122	0.5	ND	0.1	0.05		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E. coli	MPN/100mL	122	ND	ND	ND	1	<1		√

Nutrients

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Ammonia	mg/L	4	0.011	ND	0.004	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	4	0.004	0.003	0.003	0.005			
Nitrate (as NO_3)	mg/L	4	0.558	0.053	0.241	0.002	50		√
Nitrite (as NO_2)	mg/L	4	ND	ND	ND	0.002	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L	4	ND	ND	ND	0.1			
Total Phosphorus	mg/L	4	ND	ND	ND	0.005			

Plasticizers

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
bis (2-ethylhexyl) adipate	µg/L	4	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	4	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Benzo(a)pyrene	µg/L	4	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds

Organochlorine Pesticides

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Aldrin + Dieldrin	µg/L	4	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	4	ND	ND	ND	0.01	0.2		√
Heptachlor	µg/L	4	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	4	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	4	ND	ND	ND	0.1			
Methoxychlor	µg/L	4	ND	ND	ND	0.2	20		√

Organochlorine Pesticides cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Permethrin (cis + trans)	µg/L	4	ND	ND	ND	0.2			
DDT + isomers	µg/L	4	ND	ND	ND	0.2	1		√
Procymidone	µg/L	4	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	4	ND	ND	ND	0.2	20		√
Atrazine	µg/L	4	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	4	ND	ND	ND	0.1	10		√
Molinate	µg/L	4	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	4	ND	ND	ND	0.2	20		√
Propanil	µg/L	4	ND	ND	ND	0.1			
Simazine	µg/L	4	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	4	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	4	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	4	ND	ND	ND	0.2	40		√
Diazinon	µg/L	4	ND	ND	ND	0.1			
Pirimiphos methyl	µg/L	4	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	3	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	3	0.0001	ND	ND	0.0001	0.01		√
Barium	mg/L	3	0.0050	0.0036	0.0044	0.0002	0.7		√
Boron	mg/L	3	0.014	0.006	0.009	0.005	1.4		√
Cadmium	mg/L	3	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	3	0.0006	ND	0.0002	0.0001	0.05		√
Copper	mg/L	3	ND	ND	ND	0.0002	2		√

Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Lead	mg/L	3	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	3	0.0004	ND	0.0002	0.0001			
Molybdenum	mg/L	3	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	3	0.0003	ND	0.0001	0.0001	0.08		√
Selenium	mg/L	3	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	3	0.006	0.002	0.003	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	13	0.0088	ND	0.0037	0.0001	0.06		√
Bromoform	mg/L	13	0.0044	ND	0.0025	0.0001	0.1		√
Chloroform	mg/L	13	0.0039	ND	0.0024	0.0001	0.4		√
Dibromochloromethane	mg/L	13	0.0130	0.0033	0.0080	0.0001	0.15		√
THM Sum Ratio		13	0.29	0.06	0.15		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	13	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	13	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	13	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	13	ND	ND	ND	0.0001	0.005		√

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ethylbenzene	mg/L	13	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	13	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	13	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethene	mg/L	13	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	13	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	13	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	13	ND	ND	ND	0.0001	0.02		√

Halo Acetic Acids (HAAs)									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromoacetic Acid	mg/L	4	ND	ND	ND	0.0005			
Bromochloroacetic Acid	mg/L	4	0.0054	0.0017	0.0036	0.0005			
Monochloroacetic Acid	mg/L	4	ND	ND	ND	0.0005	0.02		√
Dibromoacetic Acid	mg/L	4	0.0041	0.0019	0.0031	0.0005			
Dichloroacetic Acid	mg/L	4	0.0022	ND	0.0014	0.0005	0.05		√
Trichloroacetic Acid	mg/L	4	ND	ND	ND	0.0005	0.2		√
HAA Sum Ratio		4	0.044	ND	0.029				

Huia WTP Treated Water

Acid Herbicides

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	4	ND	ND	ND	0.0001	0.01		√
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	4	ND	ND	ND	0.0001	0.04		√
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	4	ND	ND	ND	0.0001	0.1		√
Bentazone	mg/L	4	ND	ND	ND	0.0001			
Dichlorprop	mg/L	4	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	4	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	4	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	4	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	4	ND	ND	ND	0.0001	0.1		√

Chemical and Physical

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
UV absorbance at 254nm	Abs units	52	0.021	0.009	0.014	0.002			
Alkalinity (Total) as $CaCO_3$	mg/L	52	22	13	18	1			
Aluminium	mg/L	52	0.039	0.016	0.023	0.005		0.1	
Bromate	mg/L	4	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	4	0.05	0.03	0.04	0.005			
Calcium	mg/L	13	11.0	8.0	9.2	0.01			
Calcium Hardness	mg/L	13	27	20	23	0.025			
Chlorate	mg/L	4	ND	ND	ND	0.01	0.8		√
Chloride	mg/L	4	25.30	23.20	23.85	0.02		250	
Chlorine Residual	mg/L	365	1.50	0.47	1.07	0.02	5	0.6-1.0	√

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chlorite	mg/L	4	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	13	ND	ND	ND	5		10	
Conductivity	mS/m	13	17.3	14.3	15.8	0.5			
Cyanide	mg/L	4	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	52	0.8	0.5	0.7	0.02	1.5		√
Iodide	mg/L	4	0.003	0.002	0.002	0.002			
Iron	mg/L	52	0.052	0.007	0.014	0.002		0.2	
Magnesium	mg/L	130	3.30	2.00	2.71	0.001			
Magnesium Hardness	mg/L	13	13.000	8.200	11.038	0.0041			
Manganese	mg/L	52	0.0260	0.0013	0.0042	0.0005	0.4	0.04	√
pH	pH Units	365	7.9	6.9	7.6	0.1		7.0-8.5	
Potassium	mg/L	4	0.9	0.8	0.8	0.1			
Silicon	mg/L	4	14.0	12.0	13.3	0.1			
Sodium	mg/L	4	15.0	12.0	13.3	0.1		200	
Sulphate	mg/L	4	17.1	15.0	15.9	0.02		250	
Suspended Solids	mg/L	13	0.4	ND	0.2	0.2			
Total Hardness	mg/L	13	41.00	29.00	34.15	0.029		200	
Total Organic Carbon TOC	mg/L	13	1.5	0.5	1.1	0.1			
Turbidity	NTU	365	0.6	ND	0.2	0.05		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E. coli	MPN/100mL	365	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L	4	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	4	0.005	0.004	0.005	0.005			
Nitrate (as NO_3)	mg/L	4	0.360	0.080	0.188	0.002	50		√
Nitrite (as NO_2)	mg/L	4	0.002	ND	0.001	0.002	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L	4	0.220	ND	0.055	0.1			
Total Phosphorus	mg/L	4	0.006	0.00	0.004	0.005			

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Hexachlorobenzene	µg/L	4	ND	ND	ND	0.1			

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	4	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	4	0.0002	ND	0.0001	0.0001	0.01		√
Barium	mg/L	4	0.0052	0.0042	0.0047	0.0002	0.7		√
Boron	mg/L	4	0.015	ND	0.009	0.005	1.4		√
Cadmium	mg/L	4	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	4	0.0005	ND	0.0003	0.0001	0.05		√
Copper	mg/L	4	0.0031	ND	0.0009	0.0002	2		√
Lead	mg/L	4	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	4	0.0005	ND	0.0003	0.0001			
Molybdenum	mg/L	4	ND	ND	ND	0.0003	0.07		√

Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Nickel	mg/L	4	0.0004	0.0002	0.0003	0.0001	0.08		√
Selenium	mg/L	4	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	4	ND	ND	ND	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	52	0.0100	ND	0.0052	0.0001	0.06		√
Bromoform	mg/L	52	0.0058	ND	0.0020	0.0001	0.1		√
Chloroform	mg/L	52	0.0120	ND	0.0031	0.0001	0.4		√
Dibromochloromethane	mg/L	52	0.0150	ND	0.0071	0.0001	0.15		√
THM Sum Ratio		52	0.31	0.07	0.16		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	4	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	4	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	4	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	4	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	4	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	4	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	4	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	4	ND	ND	ND	0.0001	0.005		√
Ethylbenzene	mg/L	4	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	4	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	4	ND	ND	ND	0.0001	0.03	0.004	√

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Tetrachloroethene	mg/	4	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	4	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	4	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	4	ND	ND	ND	0.0001	0.02		√

Halo Acetic Acids (HAAs)									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromoacetic Acid	mg/L	4	ND	ND	ND	0.0005			
Bromochloroacetic Acid	mg/L	4	0.0059	0.0029	0.0036	0.0005			
Monochloroacetic Acid	mg/L	4	ND	ND	ND	0.0005	0.02		√
Dibromoacetic Acid	mg/L	4	0.0047	0.0018	0.0028	0.0005			
Dichloroacetic Acid	mg/L	4	0.0032	0.0012	0.0019	0.0005	0.05		√
Trichloroacetic Acid	mg/L	4	0.0015	ND	0.0004	0.0005	0.2		√
HAA Sum Ratio		4	0.071	0.025	0.041				

Muriwai WTP Treated Water

Acid Herbicides

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	4	ND	ND	ND	0.0001	0.01		√
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	4	ND	ND	ND	0.0001	0.04		√
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	4	ND	ND	ND	0.0001	0.1		√
Bentazone	mg/L	4	ND	ND	ND	0.0001			
Dichlorprop	mg/L	4	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	4	ND	ND	ND	0.0001	0.002		√
Mecoprop (MCPP)	mg/L	4	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	4	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	4	ND	ND	ND	0.0001	0.1		√

Chemical and Physical

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
UV absorbance at 254nm	Abs units	13	0.010	ND	0.003	0.002			
Alkalinity (Total) as $CaCO_3$	mg/L	4	74	68	72	1			
Aluminium	mg/L	1	0.005	0.005	0.005	0.005		0.1	
Bromate	mg/L	13	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	13	0.26	0.18	0.23	0.005			
Calcium	mg/L	4	9.7	6.2	7.7	0.01			
Calcium Hardness	mg/L	4	24	15	19	0.025			
Chlorate	mg/L	13	0.33	0.05	0.16	0.01	0.8		√
Chloride	mg/L	1	67.60	67.60	67.60	0.02		250	
Chlorine Residual	mg/L	121	1.87	0.45	0.95	0.02	5	0.6-1.0	√

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chlorite	mg/L	13	0.01	ND	ND	0.005	0.8		√
Colour	Hazen Units	1	ND	ND	ND	5		10	
Conductivity	mS/m	1	40.3	40.3	40.3	0.5			
Cyanide	mg/L	1	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	1	0.05	0.05	0.05	0.020	1.5		√
Iodide	mg/L	1	0.007	0.007	0.007	0.002			
Iron	mg/L	4	0.005	0.002	0.004	0.002		0.2	
Magnesium	mg/L	4	6.60	2.90	5.23	0.001			
Magnesium Hardness	mg/L	4	27.000	12.000	21.500	0.0041			
Manganese	mg/L	4	0.0390	ND	0.0098	0.0005	0.4	0.04	√
pH	pH Units	121	7.8	7.1	7.3	0.1		7.0-8.5	
Potassium	mg/L	1	1.7	1.7	1.7	0.1			
Silicon	mg/L	1	57.0	57.0	57.0	0.1			
Sodium	mg/L	1	62.0	62.0	62.0	0.1		200	
Sulphate	mg/L	1	15.2	15.2	15.2	0.02		250	
Suspended Solids	mg/L	4	0.3	ND	0.1	0.2			
Total Dissolved Solids	mg/L	4	310	230	265	15		1000	
Total Hardness	mg/L	4	47.00	36.00	40.75	0.029		200	
Total Organic Carbon TOC	mg/L	13	2.2	ND	0.4	0.1			
Dissolved Organic Carbon DOC	mg/L	13	1.6	ND	0.4	0.1			
Turbidity	NTU	121	0.3	ND	0.1	0.05		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E. coli	MPN/100mL	121	ND	ND	ND	1	<1		√

Nutrients

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Ammonia	mg/L	4	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	4	0.045	0.040	0.043	0.005			
Nitrate (as NO_3)	mg/L	4	3.862	3.339	3.635	0.002	50		√
Nitrite (as NO_2)	mg/L	4	ND	ND	ND	0.002	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L	4	ND	ND	ND	0.1			
Total Phosphorus	mg/L	4	0.047	0.029	0.041	0.005			

Plasticizers

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
bis (2-ethylhexyl) adipate	µg/L	1	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	1	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Benzo(a)pyrene	µg/L	1	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds

Organochlorine Pesticides

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Aldrin + Dieldrin	µg/L	1	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	1	ND	ND	ND	0.01	0.2		√
Heptachlor	µg/L	1	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	1	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	1	ND	ND	ND	0.1			

Organochlorine Pesticides cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Methoxychlor	µg/L	1	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	1	ND	ND	ND	0.2			
DDT + isomers	µg/L	1	ND	ND	ND	0.2	1		√
Procymidone	µg/L	1	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	1	ND	ND	ND	0.2	20		√
Atrazine	µg/L	1	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	1	ND	ND	ND	0.1	10		√
Molinate	µg/L	1	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	1	ND	ND	ND	0.2	20		√
Propanil	µg/L	1	ND	ND	ND	0.1			
Simazine	µg/L	1	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	1	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	1	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	1	ND	ND	ND	0.2	40		√
Diazinon	µg/L	1	ND	ND	ND	0.1			
Pirimiphos methyl	µg/L	1	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	1	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	4	0.0001	ND	ND	0.0001	0.01		√
Barium	mg/L	1	0.0180	0.0180	0.0180	0.0002	0.7		√
Boron	mg/L	1	0.033	0.033	0.033	0.005	1.4		√
Cadmium	mg/L	4	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	1	0.0010	0.0010	0.0010	0.0001	0.05		√

Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Copper	mg/L	4	0.0040	0.0009	0.0017	0.0002	2		√
Lead	mg/L	4	0.0002	ND	ND	0.0001	0.01		√
Lithium	mg/L	1	0.0041	0.0041	0.0041	0.0001			
Mercury	mg/L	1	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	1	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	4	0.0003	ND	0.0002	0.0001	0.08		√
Selenium	mg/L	1	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	4	0.004	0.002	0.003	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	13	ND	ND	ND	0.0001	0.06		√
Bromoform	mg/L	13	0.0068	ND	0.0022	0.0001	0.1		√
Chloroform	mg/L	13	0.0011	ND	0.0001	0.0001	0.4		√
Dibromochloromethane	mg/L	13	0.0042	ND	0.0010	0.0001	0.15		√
THM Sum Ratio		13	0.10	ND	0.03		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	13	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	13	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	0.4	0.0003	√

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzene	mg/L	13	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	13	ND	ND	ND	0.0001	0.005		√
Ethylbenzene	mg/L	13	ND	ND	ND	0.0001	0.3	0.002	√
Xylene	mg/L	13	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	13	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethene	mg/L	13	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	13	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	13	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	13	ND	ND	ND	0.0001	0.02		√

Halo Acetic Acids (HAAs)									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromoacetic Acid	mg/L	4	ND	ND	ND	0.0005			
Bromochloroacetic Acid	mg/L	4	ND	ND	ND	0.0005			
Monochloroacetic Acid	mg/L	4	ND	ND	ND	0.0005	0.02		√
Dibromoacetic Acid	mg/L	4	0.0024	ND	0.0014	0.0005			
Dichloroacetic Acid	mg/L	4	0.0017	ND	0.0004	0.0005	0.05		√
Trichloroacetic Acid	mg/L	4	ND	ND	ND	0.0005	0.2		√
HAA Sum Ratio		4	0.034	ND	0.009				

Onehunga WTP Treated Water (Local and Metropolitan)

Acid Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	4	ND	ND	ND	0.0001	0.01		√
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	4	ND	ND	ND	0.0001	0.04		√
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	4	ND	ND	ND	0.0001	0.1		√
Bentazone	mg/L	4	ND	ND	ND	0.0001			
Dichlorprop	mg/L	4	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	4	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	4	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	4	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	4	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance at 254nm	Abs units	12	0.011	0.006	0.010	0.002			
Alkalinity (Total) as $CaCO_3$	mg/L	4	61	53	58	1			
Aluminium	mg/L	51	0.093	0.023	0.034	0.005		0.1	
Bromate	mg/L	4	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	13	0.07	0.01	0.03	0.005			
Calcium	mg/L	4	9.4	8.4	9.0	0.01			
Calcium Hardness	mg/L	4	23	21	22	0.025			
Chlorate	mg/L	4	0.06	0.05	0.06	0.01	0.8		√

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chloride	mg/L	13	21.00	18.90	20.13	0.02		250	
Chlorine Residual	mg/L	359*	1.54	0.68	1.09	0.02	5	0.6-1.0	√
Chlorite	mg/L	4	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	1	ND	ND	ND	5		10	
Conductivity	mS/m	12	25.2	20.4	23.4	0.5			
Cyanide	mg/L	4	ND	ND	ND	0.005	0.6		√
Fluoride (Onehunga zone)	mg/L	13	0.15**	0.10**	0.13**	0.02	1.5		√
Fluoride (Metropolitan zones)	mg/L	52	1.0	0.1	0.7	0.02	1.5		√
Iodide	mg/L	1	0.005	0.005	0.005	0.002			
Iron	mg/L	51	0.039	ND	0.003	0.002		0.2	
Magnesium	mg/L	4	8.00	7.30	7.75	0.001			
Magnesium Hardness	mg/L	4	33.000	30.000	32.000	0.0041			
Manganese	mg/L	4	ND	ND	ND	0.0005	0.4	0.04	√
pH	pH Units	359*	8.2	7.2	7.9	0.1		7.0-8.5	
Potassium	mg/L	1	2.8	2.8	2.8	0.1			
Silicon	mg/L	1	30.0	30.0	30.0	0.1			
Sodium	mg/L	1	20.0	20.0	20.0	0.1		200	
Sulphate	mg/L	13	15.1	13.1	14.1	0.02		250	
Suspended Solids	mg/L	4	ND	ND	ND	0.2			
Total Dissolved Solids	mg/L	4	170	160	165	15.0		1000	
Total Hardness	mg/L	4	57.00	51.00	54.50	0.029		200	
Total Organic Carbon TOC	mg/L	50	1.1	0.3	0.6	0.1			
Turbidity	NTU	359*	0.9	ND	0.1	0.05		2.5	

*The Onehunga WTP was shut down from 11 - 18 February 2021. Daily compliance samples were not collected on the dates that the plant was not producing water. Samples were collected on the day the plant was shut down and on the day the plant was restarted.

**Naturally occurring fluoride levels only.

Microbiology

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
E. coli	MPN/100mL	359*	ND	ND	ND	1	<1		√

Nutrients

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Ammonia	mg/L	4	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	4	0.097	0.074	0.081	0.005			
Nitrate (as NO_3)	mg/L	4	14.349	12.400	13.241	0.002	50		√
Nitrite (as NO_2)	mg/L	4	ND	ND	ND	0.002	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L	4	0.310	ND	0.078	0.1			
Total Phosphorus	mg/L	4	0.106	0.073	0.087	0.005			

Plasticizers

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
bis (2-ethylhexyl) adipate	µg/L	4	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	4	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Benzo(a)pyrene	µg/L	4	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds

Organochlorine Pesticides

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Aldrin + Dieldrin	µg/L	4	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	4	ND	ND	ND	0.01	0.2		√

Organochlorine Pesticides cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Lindane	µg/L	4	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	4	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	4	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	4	ND	ND	ND	0.1			
Methoxychlor	µg/L	4	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	4	ND	ND	ND	0.2			
DDT + isomers	µg/L	4	ND	ND	ND	0.2	1		√
Procymidone	µg/L	4	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	4	ND	ND	ND	0.2	20		√
Atrazine	µg/L	4	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	4	ND	ND	ND	0.1	10		√
Molinate	µg/L	4	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	4	ND	ND	ND	0.2	20		√
Propanil	µg/L	4	ND	ND	ND	0.1			
Simazine	µg/L	4	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	4	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	4	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	4	ND	ND	ND	0.2	40		√
Diazinon	µg/L	4	ND	ND	ND	0.1			
Pirimiphos methyl	µg/L	4	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	4	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	4	0.0003	0.0002	0.0003	0.0001	0.01		√

Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Barium	mg/L	1	0.0014	0.0014	0.0014	0.0002	0.7		√
Boron	mg/L	1	0.050	0.050	0.050	0.005	1.4		√
Cadmium	mg/L	4	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	4	0.0013	0.0008	0.0010	0.0001	0.05		√
Copper	mg/L	4	0.0012	0.0005	0.0007	0.0002	2		√
Lead	mg/L	4	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	1	0.0003	0.0003	0.0003	0.0001			
Mercury	mg/L	4	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	1	0.0009	0.0009	0.0009	0.0003	0.07		√
Nickel	mg/L	4	0.0003	ND	0.0002	0.0001	0.08		√
Selenium	mg/L	1	0.0008	0.0008	0.0008	0.0005	0.01		√
Zinc	mg/L	4	ND	ND	ND	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	13	0.0009	ND	0.0001	0.0001	0.06		√
Bromoform	mg/L	13	0.0030	ND	0.0016	0.0001	0.1		√
Chloroform	mg/L	13	0.0010	ND	0.0001	0.0001	0.4		√
Dibromochloromethane	mg/L	13	0.0023	ND	0.0009	0.0001	0.15		√
THM Sum Ratio		13	0.05	ND	0.02		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	13	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,2-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	13	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	13	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	13	ND	ND	ND	0.0001	0.005		√
Ethylbenzene	mg/L	13	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	13	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	13	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethene	mg/L	13	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	13	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	13	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	13	ND	ND	ND	0.0001	0.02		√

Halo Acetic Acids (HAAs)									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromoacetic Acid	mg/L	4	ND	ND	ND	0.0005			
Bromochloroacetic Acid	mg/L	4	0.0011	ND	0.0007	0.0005			
Monochloroacetic Acid	mg/L	4	ND	ND	ND	0.0005	0.02		√
Dibromoacetic Acid	mg/L	4	0.0025	ND	0.0014	0.0005			
Dichloroacetic Acid	mg/L	4	0.0008	ND	0.0002	0.0005	0.05		√
Trichloroacetic Acid	mg/L	4	ND	ND	ND	0.0005	0.2		√
HAA Sum Ratio		4	0.016	ND	0.004				

Papakura WTP Treated Water*

*The Papakura WTP is in service from 5/02/2021.

Acid Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1080 (Sodium fluoroacetate)	mg/L	1	ND	ND	ND	0.0001	0.0035		√
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	6	ND	ND	ND	0.0001	0.01		√
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	6	ND	ND	ND	0.0001	0.04		√
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	6	ND	ND	ND	0.0001	0.1		√
Bentazone	mg/L	6	ND	ND	ND	0.0001			
Dichlorprop	mg/L	6	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	6	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	6	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	6	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	6	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV 254absorbance at 254nm	Abs units	21	0.015	ND	0.009	0.005			
Alkalinity (Total) as CaCO3	mg/L	21	59	10	15	1			
Aluminium	mg/L	21	0.014	ND	0.007	0.005		0.1	
Bromate	mg/L	17	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	17	0.07	0.04	0.05	0.005			
Calcium	mg/L	6	4.3	3.3	3.8	0.01			
Calcium Hardness	mg/L	6	11	8	10	0.025			
Chlorate	mg/L	17	0.31	0.06	0.14	0.01	0.8		√
Chloride	mg/L	6	25.40	23.20	24.42	0.02		250	

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chlorine Residual	mg/L	145	1.27	0.65	1.02	0.02	5	0.6-1.0	√
Chlorite	mg/L	17	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	6	ND	ND	ND	5		10	
Conductivity	mS/m	6	12.8	12.0	12.5	0.5			
Cyanide	mg/L	2	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	21	ND	ND	ND	0.02	1.5		√
Iodide	mg/L	2	0.004	0.002	0.003	0.001			
Iron	mg/L	21	0.021	ND	0.003	0.002		0.2	
Magnesium	mg/L	6	2.00	1.60	1.82	0.001			
Magnesium Hardness	mg/L	6	8.200	6.800	7.760	0.0041			
Manganese	mg/L	6	0.0016	0.0005	0.0010	0.0005	0.4	0.04	√
pH	pH Units	146	9.2	6.7	7.4	0.1		7.0-8.5	
Potassium	mg/L	6	1.8	1.6	1.7	0.1			
Silicon	mg/L	1	1.4	1.4	1.4	0.1			
Sodium	mg/L	6	17.0	17.0	17.0	0.1		200	
Sulphate	mg/L	6	6.5	5.9	6.0	0.02		250	
Suspended Solids	mg/L	6	ND	ND	ND	0.2			
Total Dissolved Solids	mg/L	6	110	42	74	15.0		1000	
Total Hardness	mg/L	6	18.00	15.00	17.00	0.029		200	
Total Organic Carbon TOC	mg/L	6	1.3	0.2	0.7	0.1			
Turbidity	NTU	146	2.1	0.1	0.2	0.05		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limits**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Confirmed Cryptosporidium per 100L	cysts/100 L	4	ND	ND	ND	1	<1		√
Confirmed Giardia per 100L	cysts/100 L	4	ND	ND	ND	1	<1		√

Microbiology cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limits**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E. coli	MPN/100mL	146	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L	2	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	6	0.004	ND	0.002	0.005			
Nitrate (as NO_3)	mg/L	6	0.695	0.022	0.217	0.002	50		√
Nitrite (as NO_2)	mg/L	6	ND	ND	ND	0.002	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L	6	ND	ND	ND	0.1			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	6	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	6	2.1	ND	0.35	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	6	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	6	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	6	ND	ND	ND	0.01	0.2		√

Semi Volatile Organic Compounds cont.									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Lindane	µg/L	6	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	6	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	6	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	6	ND	ND	ND	0.1			
Methoxychlor	µg/L	6	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	6	ND	ND	ND	0.2			
DDT + isomers	µg/L	6	ND	ND	ND	0.2	1		√
Procymidone	µg/L	6	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	6	ND	ND	ND	0.2	20		√
Atrazine	µg/L	6	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	6	ND	ND	ND	0.1	10		√
Molinate	µg/L	6	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	6	ND	ND	ND	0.2	20		√
Propanil	µg/L	6	ND	ND	ND	0.1			
Simazine	µg/L	6	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	6	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	6	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	6	ND	ND	ND	0.2	40		√
Diazinon	µg/L	6	ND	ND	ND	0.1			
Pirimiphos methyl	µg/L	6	ND	ND	ND	0.2	100		√

Trace Elements

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Antimony	mg/L	1	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	6	0.0002	0.0001	0.0001	0.0001	0.01		√
Barium	mg/L	6	0.015	0.012	0.014	0.0002	0.7		√
Boron	mg/L	1	ND	ND	ND	0.005	1.4		√
Cadmium	mg/L	1	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	1	ND	ND	ND	0.0001	0.05		√
Copper	mg/L	1	ND	ND	ND	0.0002	2		√
Lead	mg/L	1	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	1	ND	ND	ND	0.0001			
Mercury	mg/L	6	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	1	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	1	ND	ND	ND	0.0001	0.08		√
Selenium	mg/L	1	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	6	0.009	0.002	0.004	0.001		1.5	

Trihalomethanes

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Bromodichloromethane	mg/L	21	0.0140	ND	0.0028	21	0.06		√
Bromoform	mg/L	21	0.0024	ND	0.0008	21	0.1		√
Chloroform	mg/L	21	0.0046	ND	0.0016	21	0.4		√
Dibromochloromethane	mg/L	21	0.0064	ND	0.0031	21	0.15		√
THM Sum Ratio		21	0.30	ND	0.08	21	1		√

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzene	mg/L	6	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	6	ND	ND	ND	0.0001	0.005		√
Ethylbenzene	mg/L	6	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	6	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	6	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethene	mg/L	6	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	6	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	6	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	6	ND	ND	ND	0.0001	0.02		√

Halo Acetic Acids (HAAs)									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromoacetic Acid	mg/L	2	ND	ND	ND	0.0005			
Bromochloroacetic Acid	mg/L	2	0.0046	0.0007	0.0026	0.0005			
Monochloroacetic Acid	mg/L	2	ND	ND	ND	0.0005	0.02		√
Dibromoacetic Acid	mg/L	2	0.0048	0.0012	0.0030	0.0005			
Dichloroacetic Acid	mg/L	2	0.0028	ND	0.0014	0.0005	0.05		√
Trichloroacetic Acid	mg/L	2	0.0014	ND	0.0007	0.0005	0.2		√
HAA Sum Ratio		2	0.063	ND	0.032				

Pukekohe WTP Treated Water*

*The Pukekohe WTP is in service from 25/10/2020.

Acid Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	9	ND	ND	ND	0.0001	0.01		√
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	9	ND	ND	ND	0.0001	0.04		√
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	9	ND	ND	ND	0.0001	0.1		√
Bentazone	mg/L	9	ND	ND	ND	0.0001			
Dichlorprop	mg/L	9	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	9	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	9	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	9	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	9	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance at 254nm	Abs units	9	0.010	ND	0.006	0.002			
Alkalinity (Total) as CaCO3	mg/L	9	120	120	120	1			
Bromide	mg/L	1	0.05	0.05	0.05	0.005		250	
Calcium	mg/L	1	26.0	26.0	26.0	0.1			
Calcium Hardness	mg/L	1	65	65	65	0.025			
Chlorate	mg/L	36	1.00**	0.12	0.39	0.01	0.8		Exceeded MAV**
Chloride	mg/L	9	30.50	27.70	28.73	0.02			
Chlorine Residual	mg/L	247	1.70	0.65	1.14	0.02	5	0.6-1.0	√
Chlorite	mg/L	1	ND	ND	ND	0.005	0.8		√

**The chlorate result of 1.0 mg/L was reported to the Auckland Regional Public Health Service. Remedial actions were carried out, and all follow up samples confirmed that this was a single event. Compliance with the DWSNZ 2005 (Revised) 2018 was maintained.

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Colour	Hazen Units	9	ND	ND	ND	5		10	
Conductivity	mS/m	9	34.9	28.7	33.5	0.5			
Fluoride	mg/L	8	0.7	ND	0.5	0.02	1.5		√
Iron	mg/L	36	0.004	ND	ND	0.002		0.2	
Magnesium	mg/L	1	6.90	6.90	6.90	0.001			
Magnesium Hardness	mg/L	1	28.000	28.000	28.000	0.0041			
Manganese	mg/L	36	ND	ND	ND	0.0005	0.4	0.04	√
pH	pH unit	247	8.3	7.8	8.1	0.1		7.0 - 8.5	
Silicon	mg/L	1	29.0	29.0	29.0	0.1			
Sulphate	mg/L	9	6.9	4.6	5.2	0.02		250	
Suspended Solids	mg/L	9	0.25	ND	0.03	0.2			
Total Dissolved Solids	mg/L	9	240	190	210	15			
Total Organic Carbon TOC	mg/L	9	0.7	ND	0.4	0.1			
Total Hardness	mg/L	1	93.00	93.00	93.00	0.029		200	
Turbidity	NTU	247	0.5	ND	0.1	0.05		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limits**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E. coli	MPN/100mL	247	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L	9	0.005	ND	0.001	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	9	0.078	0.068	0.072	0.005			
Nitrate (as NO_3)	mg/L	9	0.128	0.111	0.122	0.002	50		√
Nitrite (as NO_2)	mg/L	9	ND	ND	ND	0.002	0.2		√

Nutrients cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
TKN (Total Kjeldahl Nitrogen)	mg/L	9	0.400	ND	0.059	0.1			

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	4	ND	ND	ND	0.1	0.7		√

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	4	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	4	ND	ND	ND	2	9		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	9	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	9	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	9	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	9	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	9	ND	ND	ND	0.01			
Methoxychlor	µg/L	9	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	9	ND	ND	ND	0.2			

Organonitrogen Herbicides									
Alachlor	µg/L	9	ND	ND	ND	0.2	20		√
Atrazine	µg/L	9	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	9	ND	ND	ND	0.1	10		√
Pendimethalin	µg/L	9	ND	ND	ND	0.2	20		√
Propanil	µg/L	9	ND	ND	ND	0.1			
Simazine	µg/L	9	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	9	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	4	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	9	ND	ND	ND	0.2	40		√
Diazinon	µg/L	9	ND	ND	ND	0.1			
Pirimiphos methyl	µg/L	9	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Antimony	mg/L	4	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	4	ND	ND	ND	0.0001	0.01		√
Barium	mg/L	4	0.0015	0.0008	0.0012	0.0002	0.7		√
Boron	mg/L	4	0.022	0.018	0.020	0.005	1.4		√
Cadmium	mg/L	4	0.00012	ND	0.00003	0.00005	0.004		√
Chromium	mg/L	4	ND	ND	ND	0.0001	0.05		√
Copper	mg/L	4	ND	ND	ND	0.0002	2		√
Lead	mg/L	4	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	4	0.0095	0.0082	0.0086	0.0001			
Mercury	mg/L	4	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	4	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	4	0.0001	ND	ND	0.0001	0.08		√
Selenium	mg/L	4	ND	ND	ND	0.0005	0.01		√

Trace Elements cont.									
Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Zinc	mg/L	8	ND	ND	ND	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	9	0.0035	ND	0.0020	0.0001	0.06		√
Bromoform	mg/L	9	0.0016	ND	0.0009	0.0001	0.1		√
Chloroform	mg/L	9	0.0046	ND	0.0026	0.0001	0.4		√
Dibromochloromethane	mg/L	9	0.0046	ND	0.0028	0.0001	0.15		√
THM Sum Ratio		9	0.10	ND	0.06		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	9	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	9	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	9	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	9	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	9	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	9	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	9	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	9	ND	ND	ND	0.0001	0.005		√
Ethylbenzene	mg/L	9	ND	ND	ND	0.0001	0.3	0.002	√
Xylene	mg/L	9	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	9	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethene	mg/L	9	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	9	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	9	ND	ND	ND	0.0001	0.06		√

Volatile Organic Compounds cont									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Trichloroethene	mg/L	9	ND	ND	ND	0.0001	0.02		√

Halo Acetic Acids (HAAs)									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromoacetic Acid	mg/L	1	ND	ND	ND	0.0005			
Bromochloroacetic Acid	mg/L	1	0.0012	0.0012	0.0012	0.0005			
Monochloroacetic Acid	mg/L	1	ND	ND	ND	0.0005	0.02		√
Dibromoacetic Acid	mg/L	1	0.0016	0.0016	0.0016	0.0005			
Dichloroacetic Acid	mg/L	1	ND	ND	ND	0.0005	0.05		√
Trichloroacetic Acid	mg/L	1	ND	ND	ND	0.0005	0.2		√
HAA Sum Ratio		1	ND	ND	ND				

Snells/Algies WTP Treated Water

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance at 254nm	Abs units	1	0.008	0.008	0.008	0.002			
Alkalinity (Total) as $CaCO_3$	mg/L	4	200	190	198	1			
Aluminium	mg/L	1	ND	ND	ND	0.005		0.1	
Bromate	mg/L	4	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	4	0.14	0.13	0.13	0.005			
Calcium	mg/L	4	3.9	3.4	3.7	0.01			
Calcium Hardness	mg/L	4	10	9	9	0.025			
Chlorate	mg/L	4	ND	ND	ND	0.01	0.8		√
Chloride	mg/L	1	45.60	45.60	45.60	0.02		250	
Chlorine Residual	mg/L	121	1.86	0.54	1.40	0.02	5	0.6-1.0	√
Chlorite	mg/L	4	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	1	ND	ND	ND	5		10	
Conductivity	mS/m	1	52.8	52.8	52.8	0.5			
Cyanide	mg/L	1	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	1	0.1	0.1	0.1	0.02	1.5		√
Iodide	mg/L	1	0.012	0.012	0.012	0.002			
Iron	mg/L	13	0.015	0.006	0.007	0.002		0.2	
Magnesium	mg/L	4	0.32	0.30	0.31	0.001			
Magnesium Hardness	mg/L	4	1.300	1.200	1.275	0.0041			
Manganese	mg/L	13	0.0047	0.0041	0.0043	0.0005	0.4	0.04	√
pH	pH Units	121	8.4	8.2	8.3	0.1		7.0-8.5	
Potassium	mg/L	1	0.3	0.3	0.3	0.1			
Silicon	mg/L	1	46.0	46.0	46.0	0.1			
Sodium	mg/L	1	110.0	110.0	110.0	0.1		200	
Sulphate	mg/L	1	5.9	5.9	5.9	0.02		250	
Suspended Solids	mg/L	1	ND	ND	ND	0.2			

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Total Dissolved Solids	mg/L	1	350	350	350	15			
Total Hardness	mg/L	4	11.00	9.90	10.47	0.029		200	
Total Organic Carbon TOC	mg/L	1	0.7	0.7	0.7	0.1			
Turbidity	NTU	121	0.6	0.1	0.1	0.05		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E. coli	MPN/100mL	121	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L	1	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	1	0.090	0.090	0.090	0.005			
Nitrate (as NO_3)	mg/L	1	0.049	0.049	0.049	0.002	50		√
Nitrite (as NO_2)	mg/L	1	ND	ND	ND	0.002	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L	1	ND	ND	ND	0.1			
Total Phosphorus	mg/L	1	0.092	0.092	0.092	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	1	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	1	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	1	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	1	ND	ND	ND	0.01	0.04		√
gamma-Chlordan	µg/L	1	ND	ND	ND	0.01			
Lindane	µg/L	1	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	1	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	1	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	1	ND	ND	ND	0.1			
Methoxychlor	µg/L	1	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	1	ND	ND	ND	0.2			
DDT + isomers	µg/L	1	ND	ND	ND	0.2	1		√
Procymidone	µg/L	1	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	1	ND	ND	ND	0.2	20		√
Atrazine	µg/L	1	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	1	ND	ND	ND	0.1	10		√
Molinate	µg/L	1	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	1	ND	ND	ND	0.2	20		√
Propanil	µg/L	1	ND	ND	ND	0.1			
Simazine	µg/L	1	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	1	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	1	ND	ND	ND	0.2	30		√

Organophosphorus Pesticides

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Chlorpyriphos	µg/L	1	ND	ND	ND	0.2	40		√
Diazinon	µg/L	1	ND	ND	ND	0.1			
Pirimiphos methyl	µg/L	1	ND	ND	ND	0.2	100		√

Trace Elements

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Antimony	mg/L	1	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	13	ND	ND	ND	0.0001	0.01		√
Barium	mg/L	1	ND	ND	ND	0.0002	0.7		√
Boron	mg/L	1	0.160	0.160	0.160	0.005	1.4		√
Cadmium	mg/L	1	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	1	ND	ND	ND	0.0001	0.05		√
Copper	mg/L	1	0.0015	0.0015	0.0015	0.0002	2		√
Lead	mg/L	1	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	1	0.0230	0.0230	0.0230	0.0001			
Mercury	mg/L	1	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	1	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	1	ND	ND	ND	0.0001	0.08		√
Selenium	mg/L	1	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	1	ND	ND	ND	0.001		1.5	

Trihalomethanes

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Bromodichloromethane	mg/L	13	0.0014	ND	0.0001	0.0001	0.06		√
Bromoform	mg/L	13	0.0023	ND	0.0005	0.0001	0.1		√
Chloroform	mg/L	13	0.0011	ND	0.0001	0.0001	0.4		√

Trihalomethanes cont									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Dibromochloromethane	mg/L	13	0.0029	ND	0.0007	0.0001	0.15		√
THM Ratio		13	0.06	ND	0.01		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	1	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	1	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	1	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	1	ND	ND	ND	0.0001	0.005		√
Ethylbenzene	mg/L	1	ND	ND	ND	0.0001	0.3	0.002	√
Xylene	mg/L	1	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	1	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethene	mg/L	1	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	1	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	1	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	1	ND	ND	ND	0.0001	0.02		√

Victoria Avenue WTP Treated Water

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Alkalinity (Total) as $CaCO_3$	mg/L	4	130	120	128	1			
Aluminium	mg/L	1	ND	ND	ND	0.005		0.1	
Bromate	mg/L	1	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	1	0.083	0.083	0.083	0.005			
Calcium	mg/L	13	33.0	28.0	30.8	0.01			
Calcium Hardness	mg/L	13	82	71	76	0.025			
Chlorate	mg/L	1	0.02	0.02	0.02	0.01	0.8		√
Chloride	mg/L	1	33.80	33.80	33.80	0.02		250	
Chlorine Residual	mg/L	121	1.20	0.44	0.83	0.02	5	0.6-1.0	√
Chlorite	mg/L	1	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	1	ND	ND	ND	5		10	
Conductivity	mS/m	1	36.0	36.0	36.0	0.5			
Cyanide	mg/L	1	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	1	0.1	0.1	0.1	0.02	1.5		√
Iodide	mg/L	1	0.004	0.004	0.004	0.002			
Iron	mg/L	13	0.004	ND	0.001	0.002		0.2	
Magnesium	mg/L	13	11.00	8.80	9.52	0.001			
Magnesium Hardness	mg/L	13	41.000	36.000	38.462	0.0041			
Manganese	mg/L	13	0.0024	ND	0.0010	0.0005	0.4	0.04	√
pH	pH Units	121	8.1	7.7	7.9	0.1		7.0-8.5	
Potassium	mg/L	1	3.9	3.9	3.9	0.1			
Silicon	mg/L	1	52.0	52.0	52.0	0.1			
Sodium	mg/L	1	28.0	28.0	28.0	0.1		200	
Sulphate	mg/L	1	5.2	5.2	5.2	0.02		250	
Suspended Solids	mg/L	1	ND	ND	ND	0.2			

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Total Dissolved Solids	mg/L	1	220	220	220	15		1000	
Total Hardness	mg/L	13	120.00	110.00	113.08	0.029		200	
Turbidity	NTU	121	0.6	ND	0.1	0.05		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E. coli	MPN/100mL	121	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L	1	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	1	0.060	0.060	0.060	0.005			
Nitrate (as NO_3)	mg/L	1	0.208	0.208	0.208	0.002	50		√
Nitrite (as NO_2)	mg/L	1	ND	ND	ND	0.002	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L	1	ND	ND	ND	0.1			
Total Phosphorus	mg/L	1	0.060	0.060	0.060	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	1	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	1	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	1	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	1	ND	ND	ND	0.01	0.04		√
gamma-Chlordan	µg/L	1	ND	ND	ND	0.01			
Lindane	µg/L	1	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	1	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	1	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	1	ND	ND	ND	0.1			
Methoxychlor	µg/L	1	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	1	ND	ND	ND	0.2			
DDT + isomers	µg/L	1	ND	ND	ND	0.2	1		√
Procymidone	µg/L	1	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	1	ND	ND	ND	0.2	20		√
Atrazine	µg/L	1	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	1	ND	ND	ND	0.1	10		√
Molinate	µg/L	1	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	1	ND	ND	ND	0.2	20		√
Propanil	µg/L	1	ND	ND	ND	0.1			
Simazine	µg/L	1	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	1	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	1	ND	ND	ND	0.2	30		√

Organophosphorus Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chlorpyriphos	µg/L	1	ND	ND	ND	0.2	40		√
Diazinon	µg/L	1	ND	ND	ND	0.1			
Pirimiphos methyl	µg/L	1	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	1	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	13	0.0052	0.0042	0.0047	0.0001	0.01		√
Barium	mg/L	1	0.0013	0.0013	0.0013	0.0002	0.7		√
Boron	mg/L	1	0.027	0.027	0.027	0.005	1.4		√
Cadmium	mg/L	1	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	1	ND	ND	ND	0.0001	0.05		√
Copper	mg/L	1	ND	ND	ND	0.0002	2		√
Lead	mg/L	1	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	1	0.0110	0.0110	0.0110	0.0001			
Mercury	mg/L	1	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	1	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	1	ND	ND	ND	0.0001	0.08		√
Selenium	mg/L	1	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	1	0.001	0.001	0.001	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	13	0.0025	ND	0.0010	0.0001	0.06		√
Bromoform	mg/L	13	0.0073	ND	0.0023	0.0001	0.1		√

Trihalomethanes cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chloroform	mg/L	13	0.0010	ND	0.0001	0.0001	0.4		√
Dibromochloromethane	mg/L	13	0.0071	ND	0.0020	0.0001	0.15		√
THM Ratio		13	0.16	ND	0.05		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	1	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	1	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	1	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	1	ND	ND	ND	0.0001	0.005		√
Ethylbenzene	mg/L	1	ND	ND	ND	0.0001	0.3	0.002	√
Xylene	mg/L	1	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	1	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethene	mg/L	1	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	1	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	1	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	1	ND	ND	ND	0.0001	0.02		√

Waikato WTP Treated Water

Acid Herbicides

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
1080 (Sodium fluoroacetate)	mg/L	2	ND	ND	ND	0.0001	0.0035		√
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	13	ND	ND	ND	0.0001	0.01		√
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	13	ND	ND	ND	0.0001	0.04		√
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	13	ND	ND	ND	0.0001	0.1		√
Bentazone	mg/L	13	ND	ND	ND	0.0001			
Dichlorprop	mg/L	13	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	13	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	13	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	13	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	13	ND	ND	ND	0.0001	0.1		√

Chemical and Physical

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
UV absorbance at 254nm	Abs units	52	0.037	0.010	0.020	0.002			
Alkalinity (Total) as $CaCO_3$	mg/L	52	54	36	47	1			
Aluminium	mg/L	52	0.055	0.024	0.037	0.005		0.1	
Bromate	mg/L	13	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	13	0.03	0.01	0.02	0.005			
Calcium	mg/L	13	22.0	13.0	15.6	0.01			
Calcium Hardness	mg/L	13	54	0.3	37	0.025			
Chlorate	mg/L	13	0.20	0.03	0.10	0.01	0.8		√
Chloride	mg/L	13	19.90	15.00	18.41	0.02		250	

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chlorine Residual	mg/L	363*	1.90	0.22	1.25	0.02	5	0.6-1.0	√
Chlorite	mg/L	13	0.006	ND	ND	0.005	0.8		√
Colour	Hazen Units	4	ND	ND	ND	5		10	
Conductivity	mS/m	13	24.8	18.5	21.6	0.5			
Cyanide	mg/L	4	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	52	0.9	0.6	0.7	0.02	1.5		√
Iodide	mg/L	4	0.003	0.002	0.002	0.002			
Iron	mg/L	52	0.098	0.019	0.034	0.002		0.2	
Magnesium	mg/L	13	3.50	2.20	2.68	0.001			
Magnesium Hardness	mg/L	13	14.000	0.099	10.200	0.0041			
Manganese	mg/L	52	0.0240	0.0050	0.0013	0.0005	0.4	0.04	√
pH	pH Units	363*	8.2	7.1	7.7	0.1		7.0-8.5	
Potassium	mg/L	4	3.3	2.8	3.0	0.1			
Silicon	mg/L	4	34.0	29.0	31.5	0.1			
Sodium	mg/L	4	19.0	17.0	17.8	0.1		200	
Sulphate	mg/L	13	35.6	17.7	22.6	0.02		250	
Suspended Solids	mg/L	13	2.1	0.3	0.8	0.2			
Total Dissolved Solids	mg/L	13	170	120	146			1000	
Total Hardness	mg/L	13	69.0	0.39	47.11	0.029		200	
Total Organic Carbon TOC	mg/L	13	2.0	0.4	1.2	0.1			
Turbidity	NTU	363*	1.8	0.1	0.3	0.05		2.5	

*The Waikato WTP was shutdown for planned maintenance activities on 15/07/2020 and 29/12/2020. Laboratory sampling for *E.coli*, chlorine residual, pH and turbidity was not undertaken while the plant was shutdown.

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Confirmed Cryptosporidium per 100L	cysts/100 L	11**	ND	ND	ND	1	<1		√
Confirmed Giardia per 100L	cysts/100 L	11**	ND	ND	ND	1	<1		√

Microbiology cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E. coli	MPN/100mL	363*	ND	ND	ND	1	<1		√

**Two Giardia and Cryptosporidium samples were not collected due to a delay in supply of test material and logistic issues that were outside Watercare's control.

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	4	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	13	0.009	0.006	0.007	0.005			
Nitrate	mg/L NO3	13	3.636	0.726	1.940	0.002	50		√
Nitrite	mg/L NO2	13	ND	ND	ND	0.002	0.20		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	4	0.120	ND	0.030	0.1			
Total Phosphorus	mg/L	13	0.013	0.006	0.008	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	13	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	13	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	13	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	13	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	13	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	13	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	13	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	13	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	13	ND	ND	ND	0.1			
Methoxychlor	µg/L	13	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	13	ND	ND	ND	0.2			
DDT + isomers	µg/L	13	ND	ND	ND	0.2	1		√
Procymidone	µg/L	13	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	13	ND	ND	ND	0.2	20		√
Atrazine	µg/L	13	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	13	ND	ND	ND	0.1	10		√
Molinate	µg/L	13	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	13	ND	ND	ND	0.2	20		√
Propanil	µg/L	13	ND	ND	ND	0.1			
Simazine	µg/L	13	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	13	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	13	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	13	ND	ND	ND	0.2	40		√
Diazinon	µg/L	13	ND	ND	ND	0.1			
Pirimiphos methyl	µg/L	13	ND	ND	ND	0.2	100		√

Trace Elements

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Antimony	mg/L	4	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	13	0.0027	ND	0.0012	0.0001	0.01		√
Barium	mg/L	13	0.0220	0.0110	0.0171	0.0002	0.7		√
Boron	mg/L	13	0.230	0.095	0.177	0.005	1.4		√
Cadmium	mg/L	13	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	13	0.0005	ND	ND	0.0001	0.05		√
Copper	mg/L	13	0.0200	0.0003	0.0059	0.0002	2		√
Lead	mg/L	4	0.0003	ND	0.0001	0.0001	0.01		√
Lithium	mg/L	4	0.0660	0.0480	0.0570	0.0001			
Mercury	mg/L	52	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	4	0.0004	ND	0.0002	0.0003	0.07		√
Nickel	mg/L	4	0.0003	ND	0.0001	0.0001	0.08		√
Selenium	mg/L	4	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	4	0.005	ND	0.003	0.001		1.5	

Trihalomethanes

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Bromodichloromethane	mg/L	52	0.0120	ND	0.0041	0.0001	0.06		√
Bromoform	mg/L	52	0.0023	ND	0.0002	0.0001	0.1		√
Chloroform	mg/L	52	0.0370	ND	0.0058	0.0001	0.4		√
Dibromochloromethane	mg/L	52	0.0100	ND	0.0031	0.0001	0.15		√
THM Sum Ratio		52	0.28	ND	0.11		1		√

Volatile Organic Compounds

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
1,1,1-trichloroethane	mg/L	13	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	13	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	13	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	13	ND	ND	ND	0.0001	0.005		√
Ethylbenzene	mg/L	13	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	13	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	13	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethene	mg/L	13	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	13	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	13	ND	ND	ND	0.0001	0.06		√

Halo Acetic Acids (HAAs)

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Bromoacetic Acid	mg/L	4	ND	ND	ND	0.0005			
Bromochloroacetic Acid	mg/L	4	0.0052	ND	0.0028	0.0005			
Monochloroacetic Acid	mg/L	4	ND	ND	ND	0.0005	0.02		√
Dibromoacetic Acid	mg/L	4	0.0030	ND	0.0016	0.0005			
Dichloroacetic Acid	mg/L	4	0.0038	0.0020	0.0026	0.0005	0.05		√
Trichloroacetic Acid	mg/L	4	0.0023	ND	0.0008	0.0005	0.2		√
HAA Sum Ratio		4	0.087	0.039	0.054				

Waitakere WTP Treated Water

Acid Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	3	ND	ND	ND	0.0001	0.01		√
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	3	ND	ND	ND	0.0001	0.04		√
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	3	ND	ND	ND	0.0001	0.1		√
Bentazone	mg/L	3	ND	ND	ND	0.0001			
Dichlorprop	mg/L	3	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	3	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	3	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	3	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	3	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance at 254nm	Abs units	44	0.025	ND	0.013	0.002			
Alkalinity (Total) as $CaCO_3$	mg/L	44	26	10	21	1			
Aluminium	mg/L	44	0.032	0.019	0.025	0.005		0.1	
Bromate	mg/L	3	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	3	0.05	0.03	0.04	0.005			
Calcium	mg/L	13	12.0	8.1	10.1	0.01			
Calcium Hardness	mg/L	13	29	20	27	0.025			
Chlorate	mg/L	3	ND	ND	ND	0.01	0.8		√

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chloride	mg/L	3	27.20	25.20	26.00	0.02		250	
Chlorine Residual	mg/L	314*	1.41	0.61	1.07	0.02	5	0.6-1.0	√
Chlorite	mg/L	3	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	11	ND	ND	ND	5		10	
Conductivity	mS/m	11	18.2	14.7	17.1	0.5			
Cyanide	mg/L	3	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	44	0.8	0.5	0.7	0.02	1.5		√
Iodide	mg/L	3	0.003	0.002	0.002	0.002			
Iron	mg/L	44	0.027	0.009	0.016	0.002		0.2	
Magnesium	mg/L	13	3.00	2.00	2.48	0.001			
Magnesium Hardness	mg/L	13	12.000	8.100	9.985	0.0041			
Manganese	mg/L	44	0.0280	0.0015	0.0047	0.0005	0.4	0.04	√
pH	pH Units	314*	7.9	7.0	7.6	0.1		7.0-8.5	
Potassium	mg/L	3	0.9	0.6	0.8	0.1			
Silicon	mg/L	3	14.0	9.0	12.0	0.1			
Sodium	mg/L	3	14.0	13.0	13.3	0.1		200	
Sulphate	mg/L	3	16.5	15.8	16.1	0.02		250	
Suspended Solids	mg/L	11	0.5	ND	0.2	0.2			
Total Hardness	mg/L	13	41.00	28.00	37.23	0.029		200	
Total Organic Carbon TOC	mg/L	11	1.5	0.8	1.0	0.1			
Turbidity	NTU	314*	0.6	ND	0.2	0.05		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E. coli	MPN/100mL	314*	ND	ND	ND	1	<1		√

*The Waitakere WTP was shut down from 15 - 28 January and 17 May - 28 June 2021. Compliance sampling was not undertaken on the dates that the plant was not producing water. Samples were collected on the day the plant restarted.

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L	3	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	3	0.005	0.005	0.005	0.005			
Nitrate (as NO_3)	mg/L	3	0.058	0.015	0.034	0.002	50		√
Nitrite (as NO_2)	mg/L	3	ND	ND	ND	0.002	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L	3	0.170	ND	0.057	0.1			
Total Phosphorus	mg/L	3	0.006	0.004	0.005	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	3	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	3	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	3	ND	ND	ND	0	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	3	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	3	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	3	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	3	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	3	ND	ND	ND	0.01			

Organochlorine Pesticides cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Hexachlorobenzene	µg/L	3	ND	ND	ND	0.1			
Methoxychlor	µg/L	3	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	3	ND	ND	ND	0.2			
DDT + isomers	µg/L	3	ND	ND	ND	0.2	1		√
Procymidone	µg/L	3	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	3	ND	ND	ND	0.2	20		√
Atrazine	µg/L	3	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	3	ND	ND	ND	0.1	10		√
Molinate	µg/L	3	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	3	ND	ND	ND	0.2	20		√
Propanil	µg/L	3	ND	ND	ND	0.1			
Simazine	µg/L	3	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	3	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	3	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	3	ND	ND	ND	0.2	40		√
Diazinon	µg/L	3	ND	ND	ND	0.1			
Pirimiphos methyl	µg/L	3	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	3	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	3	0.0001	0.0001	0.0001	0.0001	0.01		√
Barium	mg/L	3	0.0072	0.0048	0.0059	0.0002	0.7		√
Boron	mg/L	3	0.014	0.010	0.012	0.005	1.4		√
Cadmium	mg/L	3	ND	ND	ND	0.00005	0.004		√

Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chromium	mg/L	3	0.0007	ND	0.0002	0.0001	0.05		√
Copper	mg/L	3	0.0170	ND	0.0058	0.0002	2		√
Lead	mg/L	3	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	3	0.0008	0.0004	0.0006	0.0001			
Molybdenum	mg/L	3	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	3	0.0002	ND	0.0001	0.0001	0.08		√
Selenium	mg/L	3	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	3	0.001	ND	ND	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	44	0.0170	0.002	0.0073	0.0001	0.06		√
Bromoform	mg/L	44	0.0089	ND	0.0030	0.0001	0.1		√
Chloroform	mg/L	44	0.0220	ND	0.0045	0.0001	0.4		√
Dibromochloromethane	mg/L	44	0.0220	ND	0.0103	0.0001	0.15		√
THM Sum Ratio		44	0.50	0.05	0.24		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	3	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	3	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	3	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	3	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	3	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	3	ND	ND	ND	0.0001	0.4	0.0003	√

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzene	mg/L	3	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	3	ND	ND	ND	0.0001	0.005		√
Ethylbenzene	mg/L	3	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	3	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	3	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethene	mg/L	3	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	3	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	3	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	3	ND	ND	ND	0.0001	0.02		√

Halo Acetic Acids (HAAs)									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromoacetic Acid	mg/L	3	ND	ND	ND	0.0005			
Bromochloroacetic Acid	mg/L	3	0.0075	0.0028	0.0048	0.0005			
Monochloroacetic Acid	mg/L	3	ND	ND	ND	0.0005	0.02		√
Dibromoacetic Acid	mg/L	3	0.0039	0.0025	0.0032	0.0005			
Dichloroacetic Acid	mg/L	3	0.0039	0.0017	0.0027	0.0005	0.05		√
Trichloroacetic Acid	mg/L	3	0.0027	ND	0.0009	0.0005	0.2		√
HAA Sum Ratio		3	0.019	0.034	0.057				

Waiuku Road WTP Treated Water

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Alkalinity (Total) as $CaCO_3$	mg/L	4	120	120	120	1			
Aluminium	mg/L	1	ND	ND	ND	0.005		0.1	
Bromate	mg/L	1	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	1	0.08	0.08	0.08	0.005			
Calcium	mg/L	13	36.0	26.0	28.3	0.01			
Calcium Hardness	mg/L	1	81	65	70	0.025			
Chlorate	mg/L	1	0.02	0.02	0.02	0.01	0.8		√
Chloride	mg/L	1	33.00	33.00	33.00	0.02		250	
Chlorine Residual	mg/L	121	1.38	0.57	0.99	0.02	5	0.6-1.0	√
Chlorite	mg/L	1	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	1	ND	ND	ND	5		10	
Conductivity	mS/m	1	34.6	34.6	34.6	0.5			
Cyanide	mg/L	1	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	1	0.1	0.1	0.1	0.02	1.5		√
Iodide	mg/L	1	0.002	0.002	0.002	0.002			
Iron	mg/L	13	0.089	ND	0.009	0.002		0.2	
Magnesium	mg/L	13	11.00	6.80	7.55	0.001			
Magnesium Hardness	mg/L	13	41.000	28.000	30.692	0.0041			
Manganese	mg/L	13	0.0012	ND	0.0006	0.0005	0.4	0.04	√
pH	pH Units	121	8.1	7.8	7.9	0.1		7.0-8.5	
Potassium	mg/L	1	4.8	4.8	4.8	0.1			
Silicon	mg/L	1	34.0	34.0	34.0	0.1			
Sodium	mg/L	1	24.0	24.0	24.0	0.1		200	
Sulphate	mg/L	1	5.0	5.0	5.0	0.02		250	

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Suspended Solids	mg/L	1	ND	ND	ND	0.2			
Total Dissolved Solids	mg/L	1	210	210	210	15		1000	
Total Hardness	mg/L	13	120.00	93.00	99.69	0.029		200	
Turbidity	NTU	121	0.3	ND	0.1	0.05		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E. coli	MPN/100mL	121	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L	1	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	1	0.044	0.044	0.044	0.005			
Nitrate (as NO_3)	mg/L	1	0.093	0.093	0.093	0.002	50		√
Nitrite (as NO_2)	mg/L	1	ND	ND	ND	0.002	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L	1	ND	ND	ND	0.1			
Total Phosphorus	mg/L	1	0.050	0.050	0.050	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	1	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	1	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	1	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	1	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	1	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	1	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	1	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	1	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	1	ND	ND	ND	0.1			
Methoxychlor	µg/L	1	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	1	ND	ND	ND	0.2			
DDT + isomers	µg/L	1	ND	ND	ND	0.2	1		√
Procymidone	µg/L	1	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	1	ND	ND	ND	0.2	20		√
Atrazine	µg/L	1	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	1	ND	ND	ND	0.1	10		√
Molinate	µg/L	1	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	1	ND	ND	ND	0.2	20		√
Propanil	µg/L	1	ND	ND	ND	0.1			
Simazine	µg/L	1	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	1	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	1	ND	ND	ND	0.2	30		√

Organophosphorus Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chlorpyriphos	µg/L	1	ND	ND	ND	0.2	40		√
Diazinon	µg/L	1	ND	ND	ND	0.1			
Pirimiphos methyl	µg/L	1	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	1	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	13	0.0048	0.0034	0.0037	0.0001	0.01		√
Barium	mg/L	1	ND	ND	ND	0.0002	0.7		√
Boron	mg/L	1	0.024	0.024	0.024	0.005	1.4		√
Cadmium	mg/L	1	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	1	ND	ND	ND	0.0001	0.05		√
Copper	mg/L	1	0.0007	0.0007	0.0007	0.0002	2		√
Lead	mg/L	1	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	1	0.0140	0.0140	0.0140	0.0001			
Mercury	mg/L	1	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	1	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	1	ND	ND	ND	0.0001	0.08		√
Selenium	mg/L	1	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	1	0.003	0.003	0.003	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	13	0.0034	ND	0.0021	0.0001	0.06		√
Bromoform	mg/L	13	0.0033	ND	0.0020	0.0001	0.1		√
Chloroform	mg/L	13	0.0015	ND	0.0003	0.0001	0.4		√

Trihalomethanes cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Dibromochloromethane	mg/L	13	0.0066	ND	0.0034	0.0001	0.15		√
THM Sum Ratio		13	0.13	ND	0.08		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	1	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	1	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	1	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	1	ND	ND	ND	0.0001	0.005		√
Ethylbenzene	mg/L	1	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	1	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	1	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethene	mg/L	1	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	1	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	1	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	1	ND	ND	ND	0.0001	0.02		√

Warkworth Wells WTP Treated Water

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Alkalinity (Total) as $CaCO_3$	mg/L	4	190	180	183	1			
Bromate	mg/L	4	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	4	0.05	0.04	0.04	0.005			
Calcium	mg/L	3	25.0	19.0	21.3	0.01			
Calcium Hardness	mg/L	3	63	48	53	0.01			
Chlorate	mg/L	4	0.01	ND	ND	0.025	0.8		√
Chloride	mg/L	1	27.80	27.80	27.80	0.01		250	
Chlorine Residual	mg/L	121	1.36	0.52	0.86	0.02	5	0.6-1.0	√
Chlorite	mg/L	4	0.01	ND	ND	0.02	0.8		√
Colour	Hazen Units	1	ND	ND	ND	5		10	
Conductivity	mS/m	1	44.5	44.5	44.5	0.5			
Cyanide	mg/L	1	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	1	0.1	0.1	0.1	0.02	1.5		√
Iodide	mg/L	1	0.009	0.009	0.009	0.001			
Iron	mg/L	52	0.005	ND	0.001	0.002		0.2	
Magnesium	mg/L	3	7.70	5.80	6.43	0.001			
Magnesium Hardness	mg/L	3	32.000	24.000	26.667	0.0041			
Manganese	mg/L	52	0.0007	ND	ND	0.0005	0.4	0.04	√
pH	pH unit	121	8.0	7.3	7.7	0.1		7.0-8.5	
Sulphate	mg/L	1	10.4	10.4	10.4	0.02		250	
Suspended Solids	mg/L	1	0.3	0.3	0.3	0.2			
Total Dissolved Solids	mg/L	1	280	280	280	15		1000	
Total Hardness	mg/L	1	95.00	72.00	80.00	0.029		200	
Total Organic Carbon TOC	mg/L	3	1.3	1.3	1.3	0.1			
Turbidity	NTU	121	0.3	ND	0.1	0.05		2.5	

Microbiology

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
E. coli	MPN/100mL	121	ND	ND	ND	1	<1		√

Nutrients

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Ammonia	mg/L	1	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	1	0.050	0.050	0.050	0.005			
Nitrate (as NO_3)	mg/L	1	0.018	0.018	0.018	0.002	50		√
Nitrite (as NO_2)	mg/L	1	ND	ND	ND	0.002	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L	1	ND	ND	ND	0.1			
Total Phosphorus	mg/L	1	0.052	0.052	0.052	0.005			

Semi Volatile Organic Compounds

Organochlorine Pesticides

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Hexachlorobenzene	µg/L	1	ND	ND	ND	0.1			

Trace Elements

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Arsenic	mg/L	13	ND	ND	ND	0.0001	0.01		√

Trihalomethanes

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
Bromodichloromethane	mg/L	52	0.0210	0.0021	0.0095	0.0001	0.06		√

Trihalomethanes cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromoform	mg/L	52	0.0046	ND	0.0025	0.0001	0.1		√
Chloroform	mg/L	52	0.0210	0.0017	0.0085	0.0001	0.4		√
Dibromochloromethane	mg/L	52	0.0180	ND	0.0102	0.0001	0.15		√
THM Sum Ratio		52	0.55	0.06	0.27		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,2,4-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	1.5	0.001	√
1,4-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	0.4	0.0003	√

Wellsford WTP Treated Water

Acid Herbicides

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
2-4-5-Trichlorophenoxyacetic acid (2,4-T)	mg/L	13	ND	ND	ND	0.0001	0.01		√
2-4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	13	ND	ND	ND	0.0001	0.04		√
4-(2-4-Dichlorophenoxy) butanoic acid (2,4-DB)	mg/L	13	ND	ND	ND	0.0001	0.1		√
Bentazone	mg/L	13	ND	ND	ND	0.0001			
Dichlorprop	mg/L	13	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	13	ND	ND	ND	0.0001	0.002		√
Mecoprop (MCPP)	mg/L	13	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	13	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	13	ND	ND	ND	0.0001	0.1		√

Chemical and Physical

Component Name	Units	Number of Samples	Max	Min	Average	Detection Limit	MAV DWSNZ	GV DWSNZ	Compliance DWSNZ 2005 (Revised 2018)
UV absorbance at 254nm	Abs units	52	0.030	0.009	0.016	0.002			
Alkalinity (Total) as $CaCO_3$	mg/L	52	59	26	42	1			
Aluminium	mg/L	52	0.890	0.008	0.036	0.005		0.1	
Bromate	mg/L	4	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	4	0.05	0.04	0.05	0.005			
Calcium	mg/L	13	15.0	8.4	12.3	0.01			
Calcium Hardness	mg/L	13	36	21	31	0.025			
Chlorate	mg/L	4	ND	ND	ND	0.01	0.8		√
Chloride	mg/L	4	29.60	24.50	27.70	0.02		250	
Chlorine Residual	mg/L	121	1.89	0.80	1.28	0.02	5	0.6-1.0	√
Chlorite	mg/L	4	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	4	ND	ND	ND	5		10	

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Conductivity	mS/m	13	31.9	22.5	26.8	0.5			
Cyanide	mg/L	4	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	12	0.1	ND	ND	0.02	1.5		√
Iodide	mg/L	4	0.004	0.002	0.002	0.002			
Iron	mg/L	13	0.007	ND	0.003	0.002		0.2	
Magnesium	mg/L	13	5.50	3.00	4.44	0.001			
Magnesium Hardness	mg/L	13	23.000	12.000	18.308	0.0041			
Manganese	mg/L	13	0.0140	0.0035	0.0090	0.0005	0.4	0.04	√
pH	pH Units	121	7.4	7.1	7.3	0.1		7.0-8.5	
Potassium	mg/L	4	3.6	1.0	2.0	0.1			
Silicon	mg/L	4	18.0	14.0	15.8	0.1			
Sodium	mg/L	4	37.0	22.0	28.3	0.1		200	
Sulphate	mg/L	4	50.0	32.3	39.1	0.02		250	
Suspended Solids	mg/L	13	0.2	ND	ND	0.2			
Total Dissolved Solids	mg/L	13	200	120	153	15		1000	
Total Hardness	mg/L	13	58.00	33.00	48.77	0.029		200	
Total Organic Carbon TOC	mg/L	52	2.8	0.8	1.4	0.1			
Turbidity	NTU	121	1.5	0.1	0.2	0.05		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E. coli	MPN/100mL	121	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L	4	0.005	ND	0.001	0.005		1.5	

Nutrients cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Dissolved Reactive Phosphorus	mg/L	13	0.005	0.0027	0.004	0.005			
Nitrate (as NO_3)	mg/L	13	3.857	0.022	0.996	0.002	50		√
Nitrite (as NO_2)	mg/L	13	0.004	ND	ND	0.002	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L	4	ND	ND	ND	0.1			
Total Phosphorus	mg/L	13	0.006	ND	0.001	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	13	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	13	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	13	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	13	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	13	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	13	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	13	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	13	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	13	ND	ND	ND	0.1			
Methoxychlor	µg/L	13	ND	ND	ND	0.2	20		√

Organochlorine Pesticides cont.									
Permethrin (cis + trans)	µg/L	13	ND	ND	ND	0.2			
DDT + isomers	µg/L	13	ND	ND	ND	0.2	1		√
Procymidone	µg/L	13	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	13	ND	ND	ND	0.2	20		√
Atrazine	µg/L	13	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	13	ND	ND	ND	0.1	10		√
Molinate	µg/L	13	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	13	ND	ND	ND	0.2	20		√
Propanil	µg/L	13	ND	ND	ND	0.1			
Simazine	µg/L	13	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	13	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	13	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chlorpyriphos	µg/L	13	ND	ND	ND	0.2	40		√
Diazinon	µg/L	13	ND	ND	ND	0.1			
Pirimiphos methyl	µg/L	13	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	4	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	4	0.0002	ND	0.0001	0.0001	0.01		√
Barium	mg/L	4	0.0230	0.0150	0.0193	0.0002	0.7		√
Boron	mg/L	4	0.027	0.009	0.015	0.005	1.4		√
Cadmium	mg/L	4	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	4	0.0006	ND	0.0002	0.0001	0.05		√

Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Copper	mg/L	4	0.0095	0.0004	0.0040	0.0002	2		√
Lead	mg/L	4	0.0001	ND	ND	0.0001	0.01		√
Lithium	mg/L	4	0.0023	0.0011	0.0018	0.0001			
Mercury	mg/L	4	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	4	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	4	0.0007	0.0004	0.0006	0.0001	0.08		√
Zinc	mg/L	4	ND	ND	ND	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	51	0.0110	ND	0.0053	0.0001	0.06		√
Bromoform	mg/L	51	0.0034	ND	0.0011	0.0001	0.1		√
Chloroform	mg/L	51	0.0210	ND	0.0049	0.0001	0.4		√
Dibromochloromethane	mg/L	51	0.0140	ND	0.0064	0.0001	0.15		√
THM Sum Ratio		51	0.31	0.04	0.15		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	13	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	13	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	13	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	13	ND	ND	ND	0.0001	0.005		√

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ethylbenzene	mg/L	13	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	13	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	13	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethene	mg/L	13	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	13	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	13	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	13	ND	ND	ND	0.0001	0.02		√

Halo Acetic Acids (HAAs)									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromoacetic Acid	mg/L	4	ND	ND	ND	0.0005			
Bromochloroacetic Acid	mg/L	4	0.0098	0.0025	0.0053	0.0005			
Monochloroacetic Acid	mg/L	4	ND	ND	ND	0.0005	0.02		√
Dibromoacetic Acid	mg/L	4	0.0045	0.0021	0.0032	0.0005			
Dichloroacetic Acid	mg/L	4	0.0073	0.0017	0.0040	0.0005	0.05		√
Trichloroacetic Acid	mg/L	4	0.0039	ND	0.0017	0.0005	0.2		√
HAA Sum Ratio		4	0.170	0.034	0.090				

Water Quality Compliance Data for the Distribution Network Zones

Anzac Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.60	7.40	0.00
Median	0.20	0.00	0.87	8.00	0.00
Average	0.21	0.00	0.87	7.97	0.00
Maximum	1.30	0.00	1.52	8.30	0.00
Count of Results	92	92	92	92	92

Auckland Distribution Network Zone

Supplied by: Ardmore, Huia, Onehunga, and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.23	7.10	0.00
Median	0.20	0.00	0.82	7.80	0.00
Average	0.23	0.00	0.80	7.81	0.14
Maximum	2.20	0.00	1.36	8.80	27.00
Count of Results	745	745	745	745	745

Auckland Airport Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.49	7.40	0.00
Median	0.20	0.00	0.88	7.90	0.00
Average	0.23	0.00	0.87	7.85	4.90
Maximum	0.70	0.00	1.19	8.20	200.00
Count of Results	109	109	109	109	109

Bombay Distribution Network Zone

Supplied by: Bombay WTP

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.45	6.80	0.00
Median	0.10	0.00	0.85	7.70	0.00
Average	0.50	0.00	0.83	7.72	0.00
Maximum	13.00	0.00	1.37	8.00	0.00
Count of Results	85	85	85	85	85

Buckland Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.61	7.50	0.00
Median	0.15	0.00	0.94	8.10	0.00
Average	0.18	0.00	0.93	8.02	0.00
Maximum	1.90	0.00	1.22	8.20	0.00
Count of Results	85	85	85	85	85

Central Business District Distribution Network Zone

Supplied by: Ardmore, Huia, and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.06	7.60	0.00
Median	0.20	0.00	0.66	7.90	0.00
Average	0.23	0.00	0.65	7.91	0.02
Maximum	0.55	0.00	1.51	9.50	2.00
Count of Results	181	181	181	181	181

Clarks / Waiau Beach Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.40	7.40	0.00
Median	0.20	0.00	0.85	8.00	0.00
Average	0.22	0.00	0.83	7.99	0.00
Maximum	0.90	0.00	1.28	8.20	0.00
Count of Results	85	85	85	85	85

East Tamaki / Botany Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.55	7.40	0.00
Median	0.20	0.00	0.94	7.80	0.00
Average	0.25	0.00	0.92	7.79	1.56
Maximum	3.10	0.00	1.25	8.20	200.00
Count of Results	244	244	244	244	244

Glenbrook Beach Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.38	7.40	0.00
Median	0.20	0.00	0.68	7.90	0.00
Average	0.21	0.00	0.71	7.94	0.00
Maximum	0.60	0.00	1.13	8.20	0.00
Count of Results	85	85	85	85	85

Glen Eden / New Lynn Distribution Network Zone

Supplied by: Ardmore, Huia, Waikato, and Waitakere WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.37	7.10	0.00
Median	0.15	0.00	0.88	7.70	0.00
Average	0.23	0.00	0.88	7.70	0.97
Maximum	5.40	0.00	1.32	8.40	200.00
Count of Results	242	242	242	242	242

HBC / Waiwera Distribution Network Zone

Supplied by: Ardmore, Huia, Waikato, and Waitakere WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.20	7.30	0.00
Median	0.20	0.00	0.81	7.90	0.00
Average	0.26	0.00	0.77	8.06	0.02
Maximum	5.80	0.00	1.59	9.10	4.20
Count of Results	292	292	292	292	292

Helensville / Parakai Distribution Network Zone

Supplied by: Helensville WTP

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.46	7.10	0.00
Median	0.10	0.00	0.89	7.30	0.00
Average	0.16	0.00	0.92	7.36	0.00
Maximum	1.60	0.00	1.53	7.90	0.00
Count of Results	97	97	97	97	97

Henderson Distribution Network Zone

Supplied by: Ardmore, Huia, and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.37	7.10	0.00
Median	0.20	0.00	0.90	7.70	0.00
Average	0.23	0.00	0.89	7.70	0.03
Maximum	3.70	1.00*	1.47	8.30	7.50
Count of Results	457	457	457	457	457

* The *E. coli* result of 1.0 MPN/100mL was reported to the Auckland Regional Public Health Service. Investigations confirmed this result was due to environmental contamination of the sample and was not representative of the water in supply. Compliance with the DWSNZ was maintained.

High Head Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.36	7.40	0.00
Median	0.20	0.00	0.87	7.70	0.00
Average	0.23	0.00	0.84	7.75	0.10
Maximum	0.75	0.00	1.32	8.10	18.0
Count of Results	232	232	232	232	232

Hillsborough Distribution Network Zone

Supplied by: Ardmore, Huia, Onehunga, and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.09	7.20	0.00
Median	0.20	0.00	0.87	7.80	0.00
Average	0.24	0.00	0.84	7.85	0.06
Maximum	5.50	0.00	1.47	8.50	7.50
Count of Results	267	267	267	267	267

Hilltop Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.14	7.50	0.00
Median	0.20	0.00	0.45	8.00	0.00
Average	0.22	0.00	0.46	7.98	0.01
Maximum	1.00	0.00	0.89	8.30	1.00
Count of Results	102	102	102	102	102

Howick / Pakuranga Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.34	7.40	0.00
Median	0.20	0.00	0.76	7.90	0.00
Average	0.21	0.00	0.77	7.87	0.61
Maximum	0.75	0.00	1.28	8.60	200.00
Count of Results	365	365	365	365	365

Huia Village Distribution Network Zone

Supplied by: Huia Village WTP

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.23	7.20	0.00
Median	0.15	0.00	0.96	7.90	0.00
Average	0.16	0.00	0.92	7.96	0.03
Maximum	1.10	0.00	1.85	8.60	3.10
Count of Results	121	121	121	121	121

Kitchener Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.20	7.50	0.00
Median	0.15	0.00	0.93	8.00	0.00
Average	0.20	0.00	0.91	7.97	0.00
Maximum	2.00	0.00	1.45	8.30	0.00
Count of Results	145	145	149	149	149

Laingholm Distribution Network Zone

Supplied by: Huia WTP

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.36	7.10	0.00
Median	0.15	0.00	0.72	7.90	0.00
Average	0.19	0.00	0.71	7.97	1.65
Maximum	0.45	0.00	1.03	8.70	200.00
Count of Results	121	121	121	121	121

Mangere Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.33	7.40	0.00
Median	0.20	0.00	0.89	7.80	0.00
Average	0.27	0.00	0.89	7.80	0.02
Maximum	5.50	0.00	1.50	8.20	4.20
Count of Results	280	280	280	280	280

Manurewa Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.33	7.50	0.00
Median	0.20	0.00	0.81	7.90	0.00
Average	0.23	0.00	0.82	7.89	0.01
Maximum	0.60	0.00	1.17	8.30	1.00
Count of Results	268	268	268	268	268

Maungawhau Distribution Network Zone

Supplied by: Ardmore, Huia, and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.25	7.00	0.00
Median	0.20	0.00	0.72	7.80	0.00
Average	0.21	0.00	0.71	7.76	0.01
Maximum	1.50	0.00	1.47	8.30	4.20
Count of Results	669	669	669	669	669

Montana Distribution Network Zone

Supplied by: Huia WTP

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.41	6.90	0.00
Median	0.20	0.00	0.83	7.60	0.00
Average	0.20	0.00	0.82	7.68	0.04
Maximum	0.60	0.00	1.16	8.40	7.50
Count of Results	173	173	173	173	173

Mt Hobson Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.21	7.30	0.00
Median	0.20	0.00	0.57	7.80	0.00
Average	0.24	0.00	0.56	7.81	0.17
Maximum	1.90	0.00	1.20	8.20	36.00
Count of Results	221	221	221	221	221

Muriwai Distribution Network Zone

Supplied by: Muriwai WTP

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.31	7.10	0.00
Median	0.15	0.00	0.89	7.30	0.00
Average	0.16	0.00	0.93	7.31	0.02
Maximum	0.70	0.00	1.55	7.60	2.00
Count of Results	85	85	85	85	85

North Shore South Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.24	7.30	0.00
Median	0.20	0.00	0.65	7.80	0.00
Average	0.21	0.00	0.65	7.82	0.23
Maximum	1.40	0.00	1.33	8.90	70.00
Count of Results	483	483	483	483	483

North Shore West Distribution Network Zone

Supplied by: Ardmore, Huia, and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.25	6.90	0.00
Median	0.20	0.00	0.79	7.70	0.00
Average	0.21	0.00	0.81	7.78	0.02
Maximum	1.10	0.00	1.42	8.80	6.40
Count of Results	592	592	592	592	592

Onehunga Distribution Network Zone

Supplied by: Onehunga WTP

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.49	7.40	0.00
Median	0.10	0.00	0.89	7.90	0.00
Average	0.12	0.00	0.91	7.85	0.06
Maximum	0.40	0.00	1.46	8.30	6.40
Count of Results	133	133	133	133	133

Oratia Distribution Network Zone

Supplied by: Ardmore, Huia, Waikato, and Waitakere WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.28	7.00	0.00
Median	0.20	0.00	0.78	8.00	0.00
Average	0.23	0.00	0.76	8.12	0.00
Maximum	1.50	0.00	1.13	9.00	0.00
Count of Results	120	120	120	120	120

Otahuhu Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.52	7.40	0.00
Median	0.20	0.00	0.91	7.80	0.00
Average	0.23	0.00	0.92	7.79	0.03
Maximum	0.55	0.00	1.45	8.20	3.10
Count of Results	109	109	109	109	109

Otara / Papatoetoe / Manukau Central Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.37	7.30	0.00
Median	0.20	0.00	0.91	7.80	0.00
Average	0.32	0.00	0.89	7.80	0.16
Maximum	12.00	0.00	1.57	8.30	27.00
Count of Results	255	255	255	255	255

Patumahoe Distribution Network Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.27	7.40	0.00
Median	0.20	0.00	0.69	7.90	0.00
Average	0.21	0.00	0.68	7.89	0.00
Maximum	0.60	0.00	0.93	8.30	0.00
Count of Results	97	97	97	97	97

Snells / Algies Distribution Network Zone

Supplied by: Snells / Algies WTP

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.71	7.80	0.00
Median	0.10	0.00	1.14	8.40	0.00
Average	0.13	0.00	1.13	8.40	0.00
Maximum	0.50	0.00	1.43	8.60	0.00
Count of Results	97	97	97	97	97

Swanson Distribution Network Zone

Supplied by: Ardmore, Huia, Waikato, and Waitakere WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.15	7.20	0.00
Median	0.20	0.00	0.81	7.90	0.00
Average	0.23	0.00	0.78	7.88	1.38
Maximum	0.65	0.00	1.17	8.40	200.00
Count of Results	145	145	145	145	145

Te Henga Distribution Network Zone

Supplied by: Ardmore, Huia, Waikato, and Waitakere WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.33	7.00	0.00
Median	0.20	0.00	0.78	7.90	0.00
Average	0.21	0.00	0.79	7.92	0.00
Maximum	0.65	0.00	1.24	8.50	0.00
Count of Results	122	122	122	122	122

Waiuku Distribution Network Zone

Supplied by: Cornwall Road, Victoria Avenue, and Waiuku Road WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.44	7.60	0.00
Median	0.10	0.00	0.80	8.00	0.00
Average	0.13	0.00	0.82	8.03	1.04
Maximum	0.80	0.00	1.35	8.20	110.00
Count of Results	109	109	109	109	109

Warkworth Distribution Network Zone

Supplied by: Warkworth Wells WTP

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.29	7.50	0.00
Median	0.10	0.00	0.75	7.80	0.00
Average	0.12	0.00	0.76	7.79	0.00
Maximum	0.50	0.00	1.40	8.50	0.00
Count of Results	95	95	95	95	95

Wellsford Distribution Network Zone

Supplied by: Wellsford WTP

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.03	7.10	0.00
Median	0.15	0.00	0.68	7.30	0.00
Average	0.21	0.00	0.64	7.33	0.00
Maximum	2.20	0.00	1.23	7.60	0.00
Count of Results	110	110	110	110	110

Whenuapai Distribution Network Zone

Supplied by: Ardmore, Huia, Waikato, and Waitakere WTPs

	Turbidity	*E. coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.44	7.10	0.00
Median	0.20	0.00	0.88	7.80	0.00
Average	0.21	0.00	0.87	7.80	0.07
Maximum	0.75	0.00	1.36	8.30	8.70
Count of Results	153	153	153	153	153