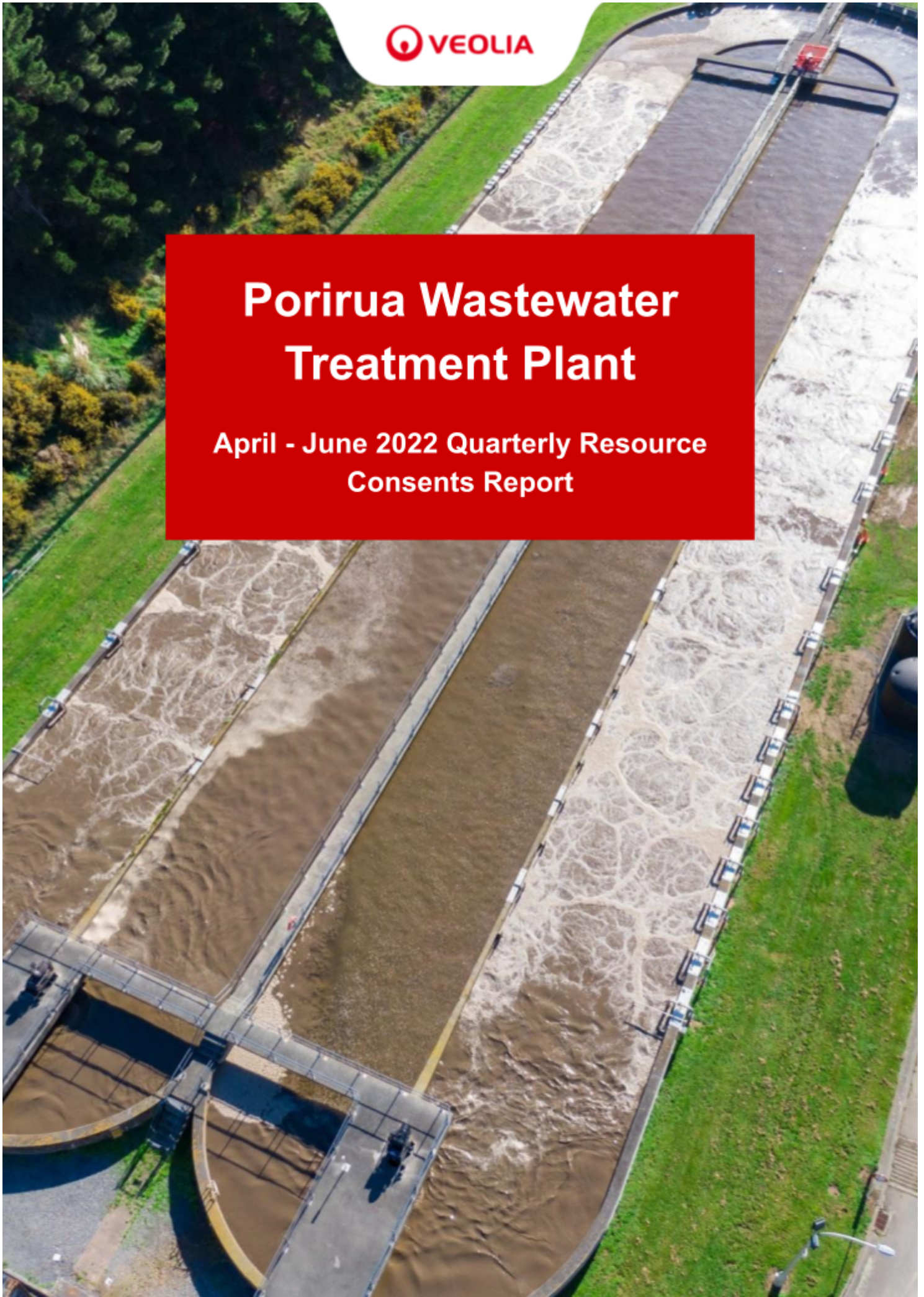




Porirua Wastewater Treatment Plant

April - June 2022 Quarterly Resource Consents Report



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CONTROL SHEET

Document Title: Porirua Wastewater Treatment Plant April - June 2022 Quarterly Resource Consents Report

Prepared by: Julian Villada

Reviewed by: Petra Vachova

Authorised by: Alex Phelan

DOCUMENT CONTROL REGISTER

Version	Status	Date	Details of Revision
0	Draft	20/07/2022	Original version for review.
1	Final	25/07/2022	Internally reviewed.

EXECUTIVE SUMMARY

The following report was prepared by Veolia on behalf of the Porirua City Council (PCC) for the Greater Wellington Regional Council (GWRC). This report includes results and observations that satisfy the reporting requirements of the following Porirua Wastewater Treatment Plant resource consents:

WGN980083 [33805]

The Porirua WWTP is governed by the resource consent under the Greater Wellington Regional Council consent file number WGN980083. In general, the consent allows the discharge of treated and partially treated effluent from the Porirua City Council's Wastewater Treatment Plant at Rukutane Point through an existing outfall at or about map reference NZMS 260:R27;320.097.

The report will cover the quarterly period from April to June 2022 as requested in this resource consent. The following is a brief overview of the compliance with the consent conditions:

Resource Consent Condition	Compliant/Non-Compliant/Not Applicable
11	Compliant
13	Compliant
14	Compliant
15	Compliant
18	Compliant
21	Compliant

Table 1: WGN980083 [33805] Resource Consent Condition Compliance

WGN980083 (02)

The Porirua WWTP is governed by the resource consent under the Greater Wellington Regional Council consent file number WGN980083 (02). In general, the consent allows the discharge of contaminants from the Porirua City Council's Wastewater Treatment Plant to the air at the or about map reference NZMS 260: R27;632.096.

The report will cover the quarterly period from April to June 2022 as requested in this resource consent. The following is a brief overview of the compliance with the consent conditions:

Resource Consent Condition	Compliant/Non-Compliant/Not Applicable
8	Compliant
9	Compliant

Table 2: WGN980083 (02) Resource Consent Condition Compliance

WGN980083 (03)

To occupy the coastal marine area with a concrete deflection wall and outfall structures, the resource consent under the Greater Wellington Regional Council consent file number WGN980083 (03) was obtained. There are no reporting requirements for this resource consent.

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Condition (11)

After 1 October 2003, the permit holder shall sample the treated effluent at the sample point required by condition 9 and the following effluent standards shall apply:

- a. Based on daily 24 hour flow proportioned composite sampling, with a running geometric mean and 90 percentile calculated each day using 90 consecutive daily test results, the effluent shall meet the following standard:
 - i. Biochemical Oxygen Demand : Geometric mean of 90 day consecutive BOD5 values shall not exceed 30g/m³ and no more than 10% of 90 consecutive daily values shall exceed 75g/m³.
 - ii. Suspended Solids : Geometric mean of 90 consecutive daily suspended solids values shall not exceed 30g/m³ and no more than 10% of 90 consecutive daily values shall exceed 75g/m³.
- b. Based on no fewer than 20 representative grab samples per month, (such samples shall be taken from the date of commencement of this permit, on separate days per month between the hours of 9am and 5pm), the effluent shall not exceed the following standard:
 - i. Faecal Coliform Bacteria: Geometric mean of 1000 per 100 millilitres and no more than 10% of monthly samples shall exceed 2,000 per 100 millilitres.
- c. Based on no fewer than one flow proportioned 24 hour composite sample collected on a normal Monday to Friday working day on a quarterly basis, concentrations of metals and other specified compounds shall not exceed the following limits:

Arsenic	0.5g/m ³
Cadmium as the element	0.05 g/m ³
Chromium	0.2 g/m ³
Copper as the element	0.8 g/m ³
Nickel as the element	0.05 g/m ³
Lead as the element	0.5 g/m ³
Zinc as the element	2.0 g/m ³
Mercury as the element	0.002 g/m ³
Phenol	0.2 g/m ³
Cyanide as CN	0.1 g/m ³
Chlorinated hydrocarbons	0.01 g/m ³

Section (a)

Below is a summary of the geometric mean and 90th percentile for the Biochemical Oxygen Demand and the Suspended Solids daily analytical results.

Please note that clarification was provided by GWRC regarding Condition (11) (a). The methodology adopted in this report will be the 10% of the 90 consecutive days.

(i) Final Effluent Biochemical Oxygen Demand

Day	April 2022			May 2022			June 2022		
	Results	Geometric Mean	Percent Compliance	Results	Geometric Mean	Percent Compliance	Results	Geometric Mean	Percent Compliance
	g/m ³	g/m ³	%	g/m ³	g/m ³	%	g/m ³	g/m ³	%
1	5	4	99	5	5	99	2	5	100
2	4	4	99	8	5	99	13	5	100
3	5	4	99	4	5	99	12	5	100
4	6	4	99	5	5	99	15	5	100
5	8	4	99	4	5	99	13	5	100
6	5	4	99	5	5	99	8	5	100
7	6	4	99	5	5	99	12	5	100
8	5	4	99	4	5	99	10	5	100
9	3	4	99	10	5	99	10	5	100
10	4	4	99	4	5	99	12	5	100
11	5	4	99	10	5	99	11	5	100
12	3	4	99	10	5	99	12	5	100
13	3	4	99	3	5	99	15	5	100
14	3	4	99	4	5	100	5	5	100
15	8	4	99	14	5	100	12	5	100
16	8	4	99	10	5	100	9	5	100
17	4	4	99	6	5	100	7	5	100
18	9	4	99	2	5	100	14	5	100
19	2	4	99	2	5	100	19	6	100
20	3	4	99	9	5	100	4	6	100
21	5	4	99	5	5	100	7	6	100
22	8	5	99	3	5	100	13	6	100
23	9	5	99	4	5	100	7	6	100
24	9	5	99	3	5	100	5	6	100
25	8	5	99	3	5	100	5	6	100
26	3	5	99	3	5	100	10	6	100
27	13	5	99	4	5	100	5	6	100
28	15	5	99	3	5	100	5	6	100
29	4	5	99	2	5	100	4	6	100
30	4	5	99	9	5	100	4	6	100
31	-	-	-	2	5	100	-	-	-
Limits	75	30	90	75	30	90	75	30	90

Table 3: BOD₅ Geometric Mean and Percent Compliance

Please note that analytical results highlighted in amber are above the 30g/m³ geometric mean limit. Analytical results highlighted in red are above the 75g/m³ percent compliance limit.

(ii) Final Effluent Suspended Solids

Day	April 2022			May 2022			June 2022		
	Results	Geometric Mean	Percent Compliance	Results	Geometric Mean	Percent Compliance	Results	Geometric Mean	Percent Compliance
	g/m ³	g/m ³	%	g/m ³	g/m ³	%	g/m ³	g/m ³	%
1	3	3	99	4	4	99	2	3	100
2	2	3	99	3	4	99	11	4	100
3	3	3	99	8	4	99	9	4	100
4	2	3	99	3	4	99	11	4	100
5	2	3	99	3	4	99	7	4	100
6	4	3	99	3	4	99	8	4	100
7	4	3	99	5	4	99	6	4	100
8	4	3	99	4	4	99	11	4	100
9	3	3	99	11	4	99	12	4	100
10	4	3	99	4	4	99	8	4	100
11	3	3	99	18	4	99	8	4	100
12	2	3	99	14	4	99	13	4	100
13	2	3	99	4	4	99	11	4	100
14	2	3	99	4	3	100	3	4	100
15	4	3	99	19	3	100	10	4	100
16	6	4	99	7	3	100	11	4	100
17	6	4	99	9	3	100	5	4	100
18	4	4	99	2	3	100	11	4	100
19	3	4	99	2	3	100	19	4	100
20	2	4	99	11	3	100	8	4	100
21	4	4	99	6	3	100	4	4	100
22	9	4	99	2	3	100	10	5	100
23	6	4	99	8	3	100	3	5	100
24	4	4	99	4	3	100	3	5	100
25	6	4	99	1	3	100	4	5	100
26	3	4	99	4	3	100	4	5	100
27	4	4	99	5	3	100	4	5	100
28	6	4	99	2	3	100	4	5	100
29	2	4	99	2	3	100	2	5	100
30	3	4	99	9	3	100	1	5	100
31	-	-	-	1	3	100	-	-	-
Limits	75	30	90	75	30	90	75	30	90

Table 4: Suspended Solid Geometric Mean and Percent Compliance

Please note that analytical results highlighted in amber are above the 30g/m³ geometric mean limit. Analytical results highlighted in red are above the 75g/m³ percent compliance limit.

Section (b)

Below is a summary of the geometric mean and percent compliance for faecal coliform analytical results.

In July 2015, an agreement with GWRC was made to use only the first 20 faecal coliform analytical results for compliance purposes. A maximum of two samples above 2,000cfu/100mL are permissible.

Day	April 2022			May 2022			June 2022		
	Results	Geometric Mean	Percent Compliance	Results	Geometric Mean	Percent Compliance	Results	Geometric Mean	Percent Compliance
	cfu/100mL	cfu/100mL	%	cfu/100mL	cfu/100mL	%	cfu/100mL	cfu/100mL	%
1	5			4			44		
2	15			12			62		
3	18			13			25		
4	4			11			28		
5	3			4			21		
6	32			12			23		
7	8			2			33		
8	14			3			28		
9	4			42			25		
10	4			23			19		
11	43			16			70		
12	313			48			35		
13	303			32			41		
14	64			2			78		
15	3			6			23		
16	15			27			57		
17	4			14			36		
18	3			25			16		
19	6			10			33		
20	13			150			42		
21	12			14			15		
22	19			7			31		
23	16			18			13		
24	25			50			6		
25	8			12			3		
26	12			56			8		
27	54			84			17		
28	641716			32			20		
29	16125			15			12		
30	3	12	100	73			21	34	100
31	-	-	-	173	12	100	-	-	-
Limits	2000	1000	85	2000	1000	85	2000	1000	85

Table 5: 20 Day Geometric Mean and Percent Compliance

Please note that analytical results highlighted in amber are above the 1000cfu/100mL geometric mean limit. Analytical results highlighted in red are above the 2000g/m³ percent compliance limit.

Section (c)

Below is a summary of the quarterly metals and other specified compounds analytical results.

Compound	Units	Limit	04/04/2022
Arsenic	g/m ³	0.5	0.001
Cadmium as the element	g/m ³	0.05	0.000
Chromium	g/m ³	0.2	0.002
Copper as the element	g/m ³	0.8	0.002
Nickel as the element	g/m ³	0.05	0.020
Lead as the element	g/m ³	0.5	0.001
Zinc as the element	g/m ³	2.0	0.000
Mercury as the element	g/m ³	0.002	0.000
Phenol	g/m ³	0.2	0.002
Cyanide as CN	g/m ³	0.1	0.005
Chlorinated hydrocarbons	g/m ³	0.01	See Appendix ii

Table 6: Analytical Results for Quarterly Metals and other Specified Compounds

For full analytical results of the metals and other specified compounds as well as the breakdown of the chlorinated hydrocarbons see Appendix ii: Heavy Metals and Specified Compounds Results.

Condition 13

The discharge shall not cause any of the following effects in the receiving waters beyond a 200 metre radius (the mixing zone) of the Rukutane Point outfall:

- The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended material;
- Any conspicuous change in the colour or visual clarity of water;
- Any adverse effect on marine aquatic life.

Paragraphs (a) and (b) of this condition shall not apply to discharges during times of plant overflow or plant bypass. Paragraph (b) shall not apply to changes in colour or visual clarity of water which occur as a result of a freshwater lens on the surface of receiving water.

When shoreline samples are collected for Condition (14) an inspection is performed for conditions 13(a) and 13(b). The results of these inspections can be made available upon request.

Condition 14

The permit holder shall monitor the enterococci and faecal coliform contents of the receiving waters at six shoreline locations between Titahi Bay Beach and Te Korohiwa Rocks. The shoreline monitoring locations shall include the following sites:

- At or about 200 metres generally eastwards of the outfall;
- At or about 200 metres generally southwestwards of the outfall; and
- Titahi Bay Beach

In addition, the permit holder shall establish a sample control site and measure background enterococci and faecal coliform contents of the coastal waters. All sampling locations shall be to the satisfaction of the Manager, Consents management, Wellington Regional Council.

Please note that the original control site posed a health and safety issue for the technician when collecting the sample. A meeting was held with GWRC on site 29th August 2019 regarding the relocation of the control site sampling location. GWRC agreed to the new sample location via email on 12th September 2019 so the new control site is at the end of Whitireia Road. The following is a list of the seven sampling points and a map of their locations:

- Sampling Point 1 - Te Korohiwa Rocks
- Sampling Point 2 - West of Outfall
- Sampling Point 3 - East of Outfall
- Sampling Point 4 - Titahi Bay Beach South
- Sampling Point 5 - Titahi Bay Beach
- Sampling Point 6 - Mount Cooper
- Control Point - Whitireia Park

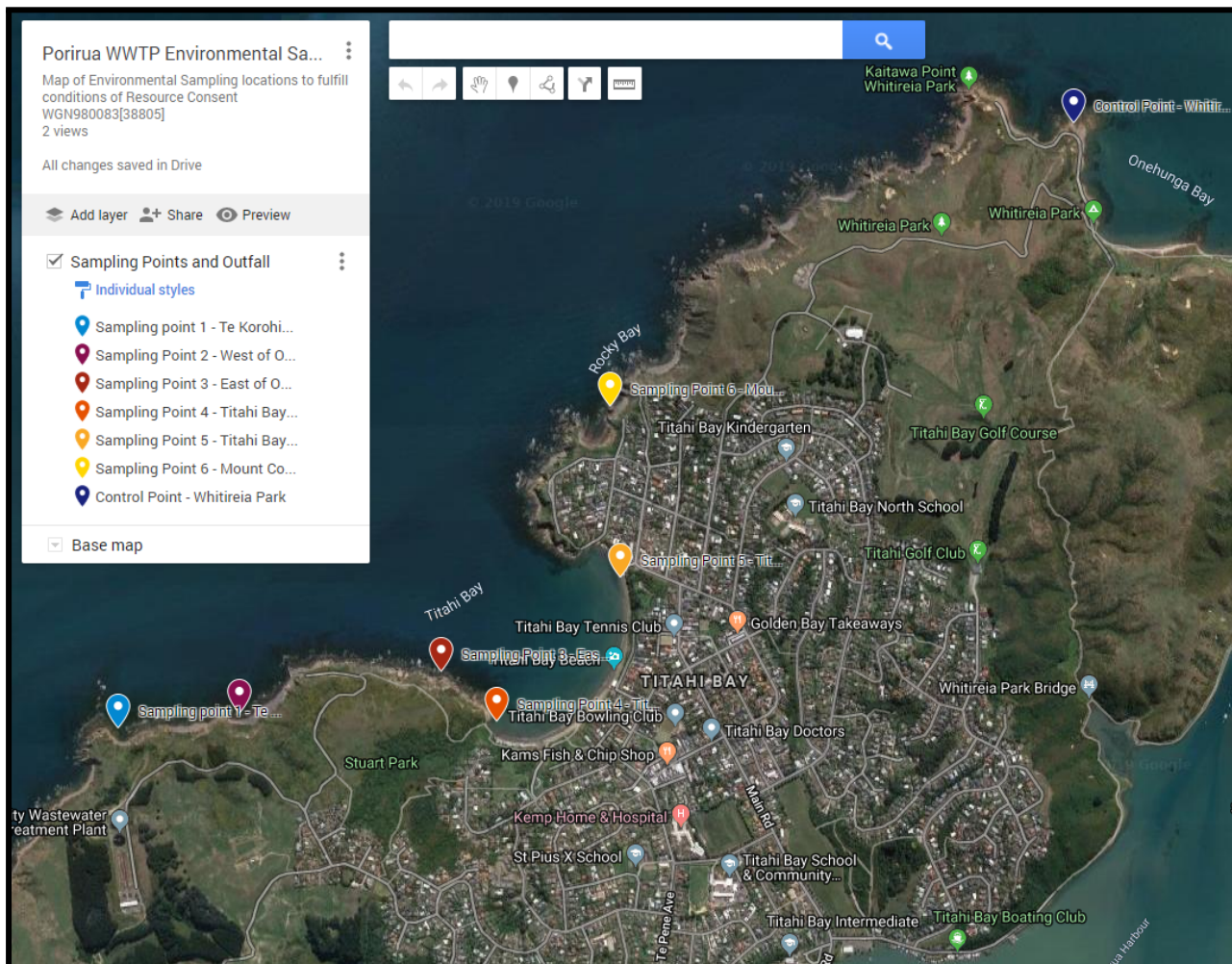


Figure 1: Shoreline Monitoring Sampling Sites

Condition 15

The water at all sampling locations required by condition 14 shall be monitored for enterococci and faecal coliforms at least three monthly. ~~Between 1 April and 30 September and monthly between 1 October and 31 March, until such time as any new disinfection plant is commissioned. For the first 12 months after commissioning such monitoring shall be carried out on at least a monthly basis. Thereafter, the monitoring may be at such reduced intensity as determined by the Manager, Consents Management, Wellington Regional Council.~~

In the event of a discharge of partly or untreated sewage effluent due to either *plant malfunction*, or *plant overflow*, or *plant bypass*, the above said waters shall further be monitored at or about 24 hours, 72 hours, and 144 hours after that discharge commenced.

For each water sample required by this condition, the permit holder shall make a record of the date, time, weather, wind and tidal conditions at its sampling location. These records for each preceding quarter shall be supplied to the Manager, Consents Management, Wellington Regional Council, in the quarterly monitoring report required by condition 17.

Shoreline samples are collected from all the sampling locations mentioned in Condition (14) during bypass or overflow events 24 hours, 72 hours, 144 hours after the discharge if there are no health and safety concerns. During a meeting with GWRC on the 29th August 2019, the interpretation of this condition by the resource consent office differed from the previous consent officer. It is now a requirement to collect a set of samples from the sampling locations once a month to comply with Condition (15). Prior to this, any bypass sampling was counted as the month sample.

Below is a summary of the bypass and overflow events that have occurred each month during this reporting quarter. The breakdown for each month and explanation of the events can be found in Condition (21). The results from each set of samples collected can be found in Appendix i: Shoreline Monitoring Data. Analytical results from each set of samples collected can be made available upon request.

Month	Bypass/Overflow Events	
	Consented	Non-Consented
June	1	0

Table 7: Monthly Bypass and Overflow Events

Please note that shoreline monitoring was not initiated for bypass discharge events where the volume was less than 1,000m³, as agreed with GWRC.

Condition 18

Notwithstanding any enforcement action Wellington Regional Council may choose to take, should the criteria set out in conditions 10 or 11 be exceeded or breached, or the effects in condition 13 (a) – (c) be caused by the discharge, the permit holder shall undertake the following:

- Immediately notify the Manager, Consents Management, Wellington Regional Council.
- Immediately investigate the reason why the criteria was exceeded.
- Immediately identify and undertake whatever appropriate remedial action to the satisfaction of the Manager, Consents Management, Wellington Regional Council, to mitigate the effects.
- Forward within five working days to the Manager, Consents Management, Wellington Regional Council, a report on the steps taken to ensure that the criteria are not breached in the future.

None of the conditions have been exceeded or breached during the April to June 2022 reporting period.

Condition 21

In the event of a plant malfunction or the discharge of untreated or partially treated effluent, the permit holder shall:

- Immediately notify both the Manager, Consents Management, Wellington Regional Council, and the Public Health Service.
- If required by Manager, Consents Management, Wellington Regional Council, provide within 48 hours a written report to the Manager, detailing manner and cause of the malfunction and the nature of the released effluent, and the steps taken (and being taken if appropriate) to remedy and control that discharge, and to prevent any such releases of untreated or partially treated effluent.

Date	Date of Notification	Duration	Volume Treated During Bypass	Total Volume of Bypass	Dilution Ratio	Consented	Cause	Monitoring Results
dd/ mmm/ yyyy	dd/ mmm/ yyyy	hrs:mins	m ³	m ³	--	Y/N		
9/06/2022	9/06/2022	11:35	40425	5009	8:1	Y	High rainfall within the catchment leading to higher inflows than the plant is designed for	Notifications submitted and sampling undertaken.

Table 8: Discharge Events

WGN980083 (02)

Condition 8

If required by the Manager, Consents Management, Wellington Regional Council, the permit holder shall carry out monitoring of air-borne pathogens to demonstrate compliance with condition 6 or 7. The monitoring shall be undertaken at six monthly intervals and the results forwarded to the Manager, Consents Management, Wellington Regional Council within one month of each survey being conducted. The location of the sample site shall be mutually agreed by the permit holder and the Manager, Consents Management, Wellington Regional Council. The survey shall be carried out by a standard method to the satisfaction of the Manager, Consents Management, Wellington Regional Council.

The Manager, Consents Management, Wellington Regional Council has not requested these surveys be performed.

Condition 9

The permit holder shall keep a record of any complaints received. The complaints will be forwarded to the Manager, Consents Management, Wellington Regional Council, within twenty-four hours of the complaint being received by the permit holder. The permit holder shall endeavour to record the complainant's name, time of the incident, wind direction and speed, as well as the plant operating conditions at the time of the complaint.

There have been no complaints during the April to June 2022 reporting period.

**APPENDIX I: Shoreline Monitoring
Data**

Te Korohiwa Rocks

Date	Time	Enterococci	Faecal Coliforms	Wind Direction	Wind Strength	Tide	Sea Conditions	WWTP Bypass/Overflow Event	Possible Source (if out of spec)
dd/mm/yyyy	hh:mm	cfu/100mL	cfu/100mL	--	--	--	--	Y/N	--
9/06/2022	17:30	160.0	31	NW	Moderate	Low	Ebb	Y - 24hr	N/A
11/06/2022	17:01	74.0	58	N	Moderate	Mid	Ebb	Y - 72hr	N/A
14/06/2022	17:36	2.0	8	NE	Light	High	Ebb	Y - 144hr	N/A

200m West of Outfall

Date	Time	Enterococci	Faecal Coliforms	Wind Direction	Wind Strength	Tide	Sea Conditions	WWTP Bypass/Overflow Event	Possible Source (if out of spec)
dd/mm/yyyy	hh:mm	cfu/100mL	cfu/100mL	--	--	--	--	Y/N	--
9/06/2022	18:33	38	18	NW	Moderate	Low	Ebb	Y - 24hr	N/A
11/06/2022	15:50	88	52	N	Moderate	Mid	Ebb	Y - 72hr	N/A
14/06/2022	16:06	34	18	NE	Light	High	Ebb	Y - 144hr	N/A

200m East of Outfall

Date	Time	Enterococci	Faecal Coliforms	Wind Direction	Wind Strength	Tide	Sea Conditions	WWTP Bypass/Overflow Event	Possible Source (if out of spec)
dd/mm/yyyy	hh:mm	cfu/100mL	cfu/100mL	--	--	--	--	Y/N	--
9/06/2022	19:10	130	25	NW	Moderate	Low	Ebb	Y - 24hr	N/A
11/06/2022	15:26	110	62	N	Moderate	Mid	Ebb	Y - 72hr	N/A
14/06/2022	16:22	22	30	NE	Light	High	Ebb	Y - 144hr	N/A

Titahi Bay Beach South

Date	Time	Enterococci	Faecal Coliforms	Wind Direction	Wind Strength	Tide	Sea Conditions	WWTP Bypass/Overflow Event	Possible Source (if out of spec)
dd/mm/yyyy	hh:mm	cfu/100mL	cfu/100mL	--	--	--	--	Y/N	--
9/06/2022	18:25	2200	1300	NW	Moderate	Low	Ebb	Y - 24hr	N/A
11/06/2022	15:41	360	140	N	Moderate	Mid	Ebb	Y - 72hr	N/A
14/06/2022	15:58	130	32	NE	Light	High	Ebb	Y - 144hr	N/A

Titahi Bay Beach

Date	Time	Enterococci	Faecal Coliforms	Wind Direction	Wind Strength	Tide	Sea Conditions	WWTP Bypass/Overflow Event	Possible Source (if out of spec)
dd/mm/yyyy	hh:mm	cfu/100mL	cfu/100mL	--	--	--	--	Y/N	--
9/06/2022	18:16	170	86	NW	Moderate	Low	Ebb	Y - 24hr	N/A
11/06/2022	16:07	14	22	N	Moderate	Mid	Ebb	Y - 72hr	N/A
14/06/2022	16:25	30	26	NE	Light	High	Ebb	Y - 144hr	N/A

Mount Cooper

Date	Time	Enterococci	Faecal Coliforms	Wind Direction	Wind Strength	Tide	Sea Conditions	WWTP Bypass/Overflow Event	Possible Source (if out of spec)
dd/mm/yyyy	hh:mm	cfu/100mL	cfu/100mL	--	--	--	--	Y/N	--
9/06/2022	18:55	64	54	NW	Moderate	Low	Ebb	Y - 24hr	N/A
11/06/2022	15:00	260	88	N	Moderate	Mid	Ebb	Y - 72hr	N/A
14/06/2022	17:51	68	20	NE	Light	High	Ebb	Y - 144hr	N/A

Control

Date	Time	Enterococci	Faecal Coliforms	Wind Direction	Wind Strength	Tide	Sea Conditions	WWTP Bypass/Overflow Event	Possible Source (if out of spec)
dd/mm/yyyy	hh:mm	cfu/100mL	cfu/100mL	--	--	--	--	Y/N	--
9/06/2022	17:55	86	100	S	Moderate	Low	Flood	Y - 24hr	N/A
11/06/2022	16:36	68	50	NW	Light	Low	Ebb	Y - 72hr	N/A
14/06/2022	16:55	66	12	SE	Light	Low	Ebb	Y - 144hr	N/A

Please note that bathing beach guidelines were used to generate the colouring for the Enterococci samples. Because there are no bathing beach guidelines for faecal coliforms, fresh water guidelines were applied. The following are the limits for both bacterial species:

Bacterial Species	Amber Limit	Red Limit
	cfu/100mL	cfu/100mL
Enterococci	140	280
Faecal Coliforms	260	550

**APPENDIX II: Heavy Metals and
Specified Compounds**

Certificate of Analysis

Laboratory Reference:220404-008

Attention: Colin Gerrard
Client: VEOLIA WATER
Address: 127 Stewart Duff Drive, Rongotai, Wellington, 6022

Final Report: 456009-0
Report Issue Date: 13-Apr-2022
Received Date: 05-Apr-2022

Client Reference:
Purchase Order: 7300176080

Laboratory Activity Dates: 07-Apr-2022 - 13-Apr-2022
Quote Reference : 11592

Sample Details

WATERS

Lab Sample ID: 220404-008-1
Client Sample ID:
Sample Date/Time: 04/04/2022 06:30
Description: Porirua Effluent Composite 1Quarterly

General Testing

Total Cyanide mg/L <0.005

Metals

Total Metals by ICP-MS—Trace (Default Digest)

Arsenic (Total)	mg/L	0.00098
Cadmium (Total)	mg/L	<0.00005
Chromium (Total)	mg/L	0.0022
Copper (Total)	mg/L	0.0016
Lead (Total)	mg/L	0.00015
Mercury (Total)	mg/L	<0.00005
Nickel (Total)	mg/L	0.00072
Zinc (Total)	mg/L	0.02

Organics

Phenols (Recoverable) by Gas Chromatography-Mass Spectrometry(Trace level)

2,3,4,6-tetrachlorophenol	mg/L	<0.001
2,4,5-trichlorophenol	mg/L	<0.001
2,4,6-trichlorophenol	mg/L	<0.004
2,4-dichlorophenol	mg/L	<0.001
2,4-dimethylphenol	mg/L	<0.001
2,6-dichlorophenol	mg/L	<0.001
2-chlorophenol	mg/L	<0.001
2-methyl 4,6-dinitrophenol	mg/L	<0.001
2-methylphenol	mg/L	<0.001
2-nitrophenol	mg/L	<0.002
4-Chloro-3-methylphenol	mg/L	<0.001
4-methylphenol	mg/L	<0.001
Pentachlorophenol	mg/L	<0.001
Phenol	mg/L	<0.002

VOC by Gas Chromatography-Mass Spectrometry (Trace level)

1-1-1-2-tetrachloroethane	mg/L	<0.001
1-1-1-trichloroethane	mg/L	<0.001
1-1-2-2-tetrachloroethane	mg/L	<0.001
1-1-2-trichloroethane	mg/L	<0.001
1-1-dichloroethane	mg/L	<0.001
1-1-dichloroethene	mg/L	<0.005
1-1-dichloropropene	mg/L	<0.001
1-2-3-trichlorobenzene	mg/L	<0.001
1-2-3-trichloropropane	mg/L	<0.001
1-2-4-trichlorobenzene	mg/L	<0.001



Sample Details (continued)

WATERS

Lab Sample ID:	220404-008-1
Client Sample ID:	
Sample Date/Time:	04/04/2022 06:30
Description:	Porirua Effluent Composite 1Quarterly

Organics

VOC by Gas Chromatography-Mass Spectrometry (Trace level)

1-2-4-trimethylbenzene	mg/L	<0.001
1-2-dibromo-3-chloropropane	mg/L	<0.001
1-2-dibromoethane	mg/L	<0.001
1-2-dichlorobenzene	mg/L	<0.001
1-2-dichloroethane	mg/L	<0.001
1-2-dichloroethene (cis and trans)	mg/L	<0.0020
1-2-dichloropropane	mg/L	<0.001
1-3-5-trimethylbenzene	mg/L	<0.001
1-3-dichlorobenzene	mg/L	<0.001
1-3-dichloropropane	mg/L	<0.001
1-3-dichloropropene (cis and trans)	mg/L	<0.0020
1-4-dichlorobenzene	mg/L	<0.001
2-2-dichloropropane	mg/L	<0.005
2-chlorotoluene	mg/L	<0.001
4-chlorotoluene	mg/L	<0.001
benzene	mg/L	<0.001
bromobenzene	mg/L	<0.001
Bromodichloromethane to MAV Ratio		0.00
bromodichloromethane	mg/L	<0.001
Bromoform to MAV Ratio		0.00
bromoform	mg/L	<0.001
bromomethane	mg/L	<0.005
carbon tetrachloride	mg/L	<0.001
chlorobenzene	mg/L	<0.001
Chloroform to MAV Ratio		0.00
chloroform	mg/L	<0.001
chloromethane	mg/L	<0.005
cis-1-2-dichloroethylene	mg/L	<0.001
cis-1-3-dichloropropene	mg/L	<0.001
Dibromochloromethane to MAV Ratio		0.00
dibromochloromethane	mg/L	<0.001
dibromomethane	mg/L	<0.001
dichlorodifluoromethane	mg/L	<0.005
ethylbenzene	mg/L	<0.001
ethylchloride	mg/L	<0.001
fluorotrichloromethane	mg/L	<0.001
hexachlorobutadiene	mg/L	<0.001
iso-propylbenzene	mg/L	<0.001
m- & p-xylene	mg/L	<0.001
methylene chloride	mg/L	<0.005
naphthalene	mg/L	<0.001
n-butylbenzene	mg/L	<0.001
n-propylbenzene	mg/L	<0.001
o-xylene	mg/L	<0.001
p-isopropyl toluene	mg/L	<0.001
sec-butylbenzene	mg/L	<0.001
styrene	mg/L	<0.001
tert-butyl benzene	mg/L	<0.001
tetrachloroethylene	mg/L	<0.001
THM Ratio		0.00
toluene	mg/L	<0.001
trans-1-2-dichloroethene	mg/L	<0.001
trans-1-3-dichloropropene	mg/L	<0.001
trichloroethylene	mg/L	<0.001
vinyl chloride	mg/L	<0.001

Sample Details (continued)		WATERS	
Lab Sample ID:		220404-008-1	
Client Sample ID:			
Sample Date/Time:		04/04/2022 06:30	
Description:		Porirua Effluent Composite 1Quarterly	

Organics

VOC by Gas Chromatography-Mass Spectrometry (Trace level)

Xylenes (total)	mg/L	<0.0020
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Results marked with * are not accredited to International Accreditation New Zealand. A dash indicates no test performed.

Where samples have been supplied by the client, they are tested as received.

The results of analysis contained in this report relate only to the sample(s) tested. Where sample collection was performed by the laboratory, the results of analysis contained in this report relate only to the sample(s) collected.

Reference Methods

The sample(s) referred to in this report were analysed by the following method(s)

Analyte	Method Reference	MDL	Samples	Location
General Testing				
Total Cyanide by Distillation and Colorimetry/Discrete Analyser	APHA (online edition) 4500-CN C & E (modified)	0.005 mg/L	All	Auckland
Metals				
Total Metals by ICP-MS—Trace (Default Digest)				
Arsenic (Total)	APHA (online edition) 3125 B by ICPMS	0.00010 mg/L	All	Auckland
Cadmium (Total)	APHA (online edition) 3125 B by ICPMS	0.00005 mg/L	All	Auckland
Chromium (Total)	APHA (online edition) 3125 B by ICPMS	0.0005 mg/L	All	Auckland
Copper (Total)	APHA (online edition) 3125 B by ICPMS	0.0002 mg/L	All	Auckland
Lead (Total)	APHA (online edition) 3125 B by ICPMS	0.00010 mg/L	All	Auckland
Mercury (Total)	APHA (online edition) 3125 B by ICPMS	0.00005 mg/L	All	Auckland
Nickel (Total)	APHA (online edition) 3125 B by ICPMS	0.00010 mg/L	All	Auckland
Zinc (Total)	APHA (online edition) 3125 B by ICPMS	0.001 mg/L	All	Auckland

Organics

Phenols (Recoverable) by Gas Chromatography-Mass Spectrometry(Trace level)

2,3,4,6-tetrachlorophenol	Micro SPE, GC-MSD	0.001 mg/L	All	Auckland
2,4,5-trichlorophenol	Micro SPE, GC-MSD	0.001 mg/L	All	Auckland
2,4,6-trichlorophenol	Micro SPE, GC-MSD	0.004 mg/L	All	Auckland
2,4-dichlorophenol	Micro SPE, GC-MSD	0.001 mg/L	All	Auckland
2,4-dimethylphenol	Micro SPE, GC-MSD	0.001 mg/L	All	Auckland
2,6-dichlorophenol	Micro SPE, GC-MSD	0.001 mg/L	All	Auckland
2-chlorophenol	Micro SPE, GC-MSD	0.001 mg/L	All	Auckland
2-methyl 4,6-dinitrophenol	Micro SPE, GC-MSD	0.001 mg/L	All	Auckland
2-methylphenol	Micro SPE, GC-MSD	0.001 mg/L	All	Auckland
2-nitrophenol	Micro SPE, GC-MSD	0.002 mg/L	All	Auckland
4-Chloro-3-methylphenol	Micro SPE, GC-MSD	0.001 mg/L	All	Auckland
4-methylphenol	Micro SPE, GC-MSD	0.001 mg/L	All	Auckland
Pentachlorophenol	Micro SPE, GC-MSD	0.001 mg/L	All	Auckland
Phenol	Micro SPE, GC-MSD	0.002 mg/L	All	Auckland

VOC by Gas Chromatography-Mass Spectrometry (Trace level)

1-1-1-2-tetrachloroethane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-1-1-trichloroethane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-1-2-2-tetrachloroethane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-1-2-trichloroethane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-1-dichloroethane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-1-dichloroethene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.0005 mg/L	All	Auckland
1-1-dichloropropene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-2-3-trichlorobenzene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland

VOC by Gas Chromatography-Mass Spectrometry (Trace level)

1-2-3-trichloropropane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-2-4-trichlorobenzene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-2-4-trimethylbenzene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-2-dibromo-3-chloropropane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-2-dibromoethane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-2-dichlorobenzene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-2-dichloroethane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-2-dichloroethene (cis and trans)	APHA (online edition) 6200 B (Purge and Trap) Modified	0.0002 mg/L	All	Auckland
1-2-dichloropropane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-3-5-trimethylbenzene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-3-dichlorobenzene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-3-dichloropropane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
1-3-dichloropropene (cis and trans)	APHA (online edition) 6200 B (Purge and Trap) Modified	0.0002 mg/L	All	Auckland
1-4-dichlorobenzene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
2-2-dichloropropane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.0005 mg/L	All	Auckland
2-chlorotoluene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
4-chlorotoluene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
benzene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
bromobenzene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
Bromodichloromethane to MAV Ratio	APHA (online edition) 6200 B (Purge and Trap) Modified	0.1	All	Auckland
bromodichloromethane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
Bromoform to MAV Ratio	APHA (online edition) 6200 B (Purge and Trap) Modified	0.1	All	Auckland
bromoform	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
bromomethane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.0005 mg/L	All	Auckland
carbon tetrachloride	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
chlorobenzene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
Chloroform to MAV Ratio	APHA (online edition) 6200 B (Purge and Trap) Modified	0.1	All	Auckland
chloroform	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
chloromethane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.0005 mg/L	All	Auckland
cis-1-2-dichloroethylene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
cis-1-3-dichloropropene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
Dibromochloromethane to MAV Ratio	APHA (online edition) 6200 B (Purge and Trap) Modified	0.1	All	Auckland
dibromochloromethane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
dibromomethane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
dichlorodifluoromethane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.0005 mg/L	All	Auckland
ethylbenzene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland

Organics

VOC by Gas Chromatography-Mass Spectrometry (Trace level)

ethylchloride	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
fluorotrichloromethane	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
hexachlorobutadiene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
iso-propylbenzene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
m- & p-xylene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
methylene chloride	APHA (online edition) 6200 B (Purge and Trap) Modified	0.0005 mg/L	All	Auckland
naphthalene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
n-butylbenzene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
n-propylbenzene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
o-xylene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
p-isopropyl toluene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
sec-butylbenzene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
styrene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
tert-butyl benzene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
tetrachloroethylene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
THM Ratio	APHA (online edition) 6200 B (Purge and Trap) Modified	0.1	All	Auckland
toluene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
trans-1-2-dichloroethene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
trans-1-3-dichloropropene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
trichloroethylene	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
vinyl chloride	APHA (online edition) 6200 B (Purge and Trap) Modified	0.00010 mg/L	All	Auckland
Xylenes (total)	APHA (online edition) 6200 B (Purge and Trap) Modified	0.0002 mg/L	All	Auckland

Preparations

Digest for Total Metals in Liquids	APHA 3030E Modified (4:1 Nitric:Hydrochloric Acid: 95°C 2 hours)		All	Auckland
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*The method detection limit (MDL) listed is the limit attainable in a relatively clean matrix. If dilutions are required for analysis the detection limit may be higher.
For more information please contact the Compliance and Projects Manager.*

Samples, with suitable preservation and stability of analytes, will be held by the laboratory for a period of two weeks after results have been reported, unless otherwise advised by the submitter.

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